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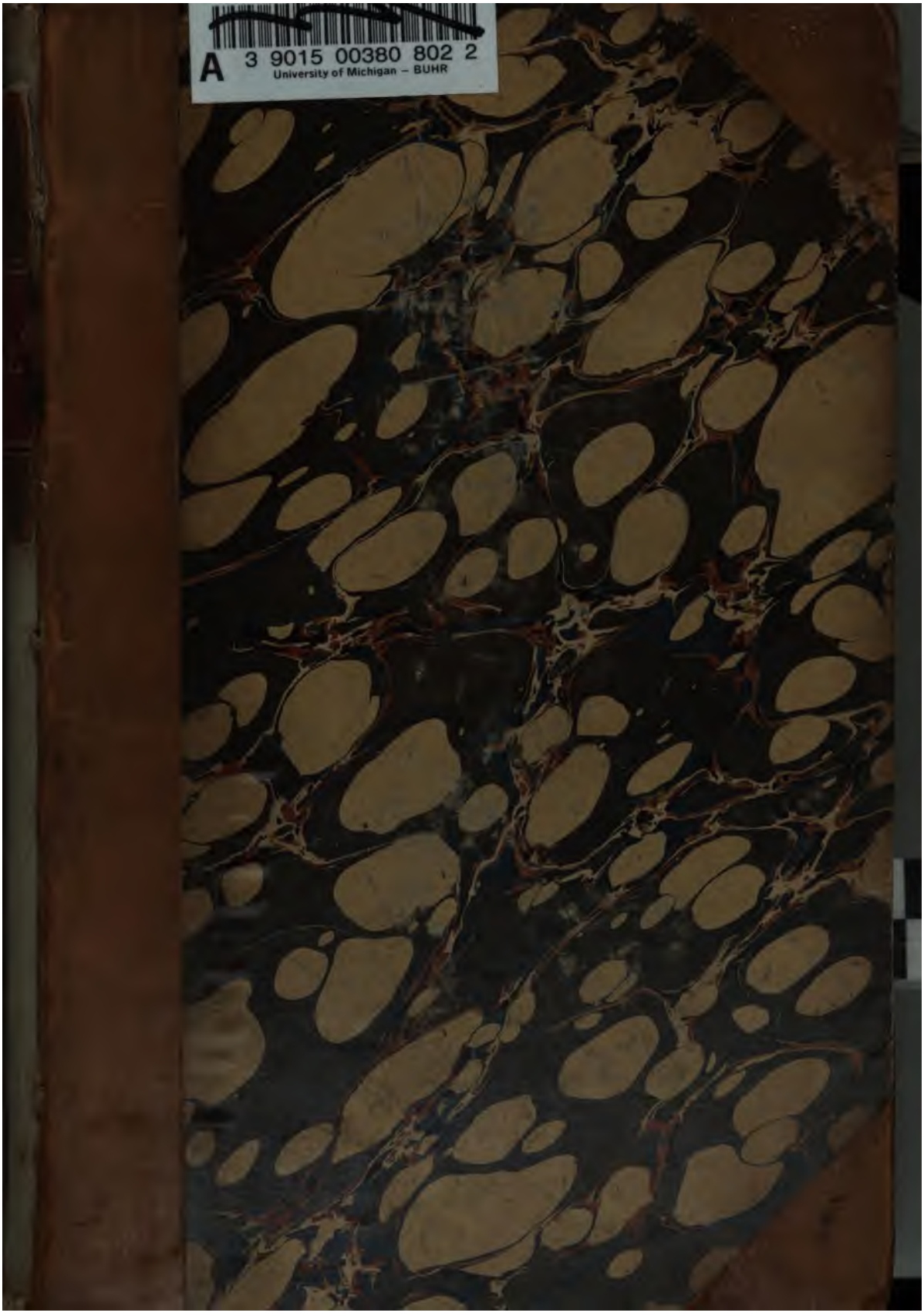
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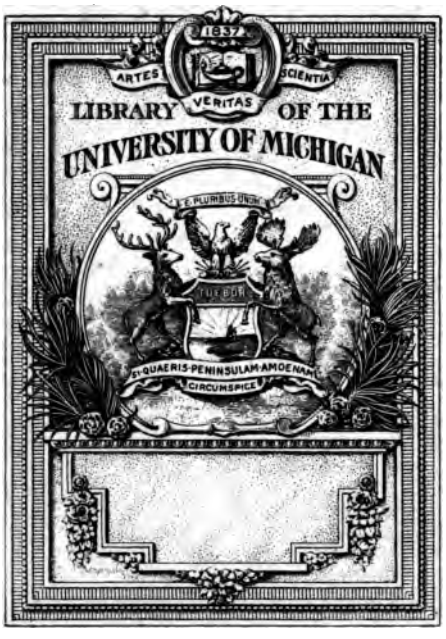
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THE

MEDICO-CHIRURGICAL REVIEW,

AND

JOURNAL

OF

PRACTICAL MEDICINE.

(*NEW SERIES.*)

VOLUME THIRTY-NINE,

[1st of APRIL, to 30th SEPTEMBER,]

1843.

VOL. XIX. of DECENNIAL SERIES.

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BY JAMES JOHNSON, M.D.

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THE

Medico-Chirurgical Review,

No. LXXVII.

[NO. 37 OF A DECENNIAL SERIES.]

APRIL 1, TO JULY 1, 1843.

THE LIFE OF SIR ASTLEY COOPER, BART., INTERSPERSED WITH SKETCHES FROM HIS NOTE BOOKS OF DISTINGUISHED CONTEMPORARY CHARACTERS. By *Bransby Blake Cooper*, Esq. F.R.S. In two volumes 8vo. with a Portrait. J. W. Parker, West Strand, London, 1843.

ALTHOUGH medicine can boast of many illustrious characters among the dead, and some among the living, yet, considering the prodigious masses of which our profession has consisted, and which are still increasing in numbers as well as dimensions, these STARS of the first magnitude, that shed their light over both hemispheres, are not too numerous.

"Apparent RARI nantes in gurgite vasto."

Over nine hundred and ninety-nine, out of every thousand of the labourers in the great medical vineyard, oblivion waves its sable wing almost as soon as the last breath has exhaled from the body! Nay, nine-tenths of those who have a considerable name in their day, sink into the same oblivious ocean in a very few years after their mortal remains are deposited in the tomb. We are aware that no reputation, however high, or however extensive, can save the physician or surgeon from this gloomy fate—unless he leaves behind him some imperishable memorial of his talents or industry. The name of Hippocrates or Celsus would not have descended on the stream of time, had not they committed their observations and reflections to the parchment scroll, to be afterwards multiplied by the press.

Sir A. Cooper is not a man whose name will sink into obscurity and soon become annihilated. His great works on Hernia, Dislocations, and the Mamma alone, will bear his fame to posterity; but the vast mass of his actions, thoughts, observations, reflections, and remarks on others, would have sunk into oblivion, had not his amiable and talented nephew rescued them from destruction and diffused them throughout Europe and America. The biography of a man who has risen from obscurity to resplendent fame is highly interesting to all classes of readers, and the curiosity to learn the steps by which the pinnacle of reputation has been gained, strongly pervades every breast—especially within the pale of the profession. Mr. Cooper has been blamed for separating the history of his uncle's pro-

fessional *writings*, from that of his professional *life*. We think the disjunction was a wise and prudent procedure. The *writings* of Sir Astley are well known to the medical world:—they would not be read or understood by the general reader. To both classes their introduction in these volumes would have proved a heavy and useless clog on the narrative. With these few premonitory remarks, we shall proceed to draw up a concentrated sketch of the life of this remarkable personage—a man who was courted, praised, consulted, and admired by every class of society, from the proud and fastidious REGENT of these realms, down to the reckless dealer in dead men's bodies—the squalid RESURRECTION-MAN.

We shall not trace the genealogy of Sir Astley Cooper. He was descended from ADAM—and the haughty Autocrats of Russia and Austria, can claim no higher pedigree. It is for HIM of the Celestial Empire to call the Moon his brother; but we of the terrestrial globe see no honour in the fraternity of LUNATICS.

The father of Sir Astley was a highly respectable clergyman of Norfolk, who *wrangled* at Cambridge, and came out with honours. His mother wrote many works, after her marriage—besides the labour of bearing and rearing a large family. Master Astley (for so we must, for some time call him) was born in August, 1768, and, for some unknown reason, was put out to be nursed—the only one of the family who could boast of a foster-mother. Mrs. Cooper, his mother, instructed him in the rudiments of knowledge—or rather learning—till he was placed under the parish pedagogue,—"and no one did him less credit than the young Sir Astley." 45. The hero of our memoir displayed anything but assiduity or attention to study; but, on the other hand, he studied with infinite success, every kind of freak and frolic that high animal spirits and exuberant health could prompt a juvenile rural lad to accomplish. He could rob orchards—plunder gardens—climb the loftiest trees—walk along the roofs of houses—ride horses without saddle or bridle, guiding them with a stick—go up chimneys with the agility of a sweep—and astonish the natives by imitating their cries and rattles. Yet his tricks, though sometimes slightly mischievous and annoying, were never wicked, malicious, or ill-natured—they were often useful, as the following anecdote (which we abridge) will shew. The grave-digger of Yarmouth had a most termagant wife, who led him the life of a dog, especially when drunk, which was too often the case. One night when Mrs. Bacon was far more than half-seas over, and had chased her husband out of the house, Master Astley, dressed up in the character of his Satanic majesty, entered the mansion, and presented himself before the astonished and somewhat alarmed Xantippe. Under the soothing address of the youthful devil, and the potent effects of an unusual cargo of gin, the termagant plucked up Dutch courage, and entered into familiar confabulation with the supposed monarch of the nether regions. The latter promised, as usual, all kinds of pleasure and ample independence to the sexton's wife, and contrived, on parting, to slip a piece of money into her hand. A sound sleep followed the gin potations and the Satanic audience; but, on awaking next morning, when the alcoholic fumes had exhaled—when memory reproduced the preceding evening's negotiation—and when the *bribe* was found on the table—then the horrors of despair and remorse overwhelmed the wretched tipler, and even the stimu-

lus of Usquebaugh failed to brace the nerves of one who had taken the enlisting fee from the father of evil!!

Now, although this (literally speaking) was a *Devilish* trick of Master Astley; the reformation which followed in the grave-digger's rib might well atone for the temporary personification of infernal royalty which the youngster assumed.

The anecdote of young Astley's staunching a wounded artery in his foster-brother's arm by winding a handkerchief round the limb, *a la tourniquet*, is well known, and need not here be detailed. Whether this incident had any share in leading the young harum scarum Cooper to prefer surgery to divinity, we have much doubt, though we do not deny the influence which it may have exerted. But "Paulo majora canamus."

At the age of 16 and in the year 1784, he accompanied his uncle, Mr. Cooper, Surgeon of Guy's Hospital, to London, and to him became an articled pupil. He resided, however, in the house of Mr. Cline, who then took a few professional boarders, and the society of this distinguished surgeon pleased young Cooper much more than that of his uncle. It appears that Master Astley had very much neglected his classical, and almost entirely his mathematical education; but his career, and still more that of John Hunter, shew how much these original deficiencies may be compensated in after life by vigorous intellects and "improbus labour." It is very doubtful whether the genius of John Hunter would have ever become so conspicuous, had his mind been trained in classical, mathematical, and polite literature, which would have intervened materially with the blood and dirt of the dissecting room.

Cline was well known to be a Deist in religion, and a Democrat in politics. But he was an honest and an honourable man—and far superior to Mr. Cooper, the surgeon of Guy's, both in operative surgery, general information, and private practice. It is not much to be wondered at, that young Astley contrived to have his indentures to his uncle cancelled, and to transfer them to the rival surgeon of St. Thomas's. Among the short characteristics which Sir Astley has left of his contemporaries, we find the following of Cline.

"Mr. Cline was a man of excellent judgment, of great caution, of accurate knowledge; particularly taciturn abroad, yet open, friendly, and very conversationable at home.

'In surgery, cool, safe, judicious, and cautious; in anatomy, sufficiently informed for teaching and practice. He wanted industry and professional zeal, liking other things better than the study or practice of his profession.

'In politics, a democrat, living in friendship with Horne Tooke.*

'In morals, thoroughly honest; in religion, a Deist.

'A good husband, son, and father.

'As a friend, sincere, but not active; as an enemy, most inveterate.

---

* "Mr. Cline's name is mentioned in the following flattering manner in the second part of the *Diversions of Purley*:

'B — What can you set up, in matter of language, against the decisive authority of such a writer as Horace?

'Usus,'

'Quem penes arbitrium est et jus et norma loquendi.'

'He was mild in his manners, gent
but withal brave as a lion.
'His temper was scarcely ever ruff
'Towards the close of life he caug
mind and body.'" 99.

When domesticated in the hou
Square, St. Mary Axe) young A
denly, and take heartily to harnes
"led into those dissipations which
but his great and habitual tempera
sequences which too frequently foll

At the commencement of the fo
of the "PHYSICAL SOCIETY" of
sixpence for non-attendance. As
obliged to read a paper, *in the sam*
not a little curious that Master As
last—CANCER OF THE MAMMA! "
were it to spring to light, it would
to its namesake of 1840.

In October 1785, we find the yo
work in perfecting himself in anato
At this time Mr., afterwards Dr. Ha
in the Borough School, and being o
no means popular with the pupils.
suggested the idea to young Cooper
which he was sure of retaining by h
in re. In the second session he had
secting room, that his advice and opi
there. He now began to go round th
attention to surgical cases. Instead o
attendance at the society, he was now
occupation in his profession being evide
but of choice and inclination.

It was about this time (1786-7) that he
by John Hunter, delivered in Leicester Squ
his doctrines with enthusiasm. In the begin
visited Gregson, a convicted felon in Newgate
fever, which threatened to prove fatal, but fron
then went, for a time, to his native air. In the
Mr. Cooper repaired to Edinburgh, with letters
leading characters of that day in modern Athens.
19 years. He paid six shillings and sixpence per w

'*Horne Tooke.*—I do not think him any authority whatev
He wrote divinely: and so Vestris danced. But do you
excellent friend, Mr. Cline would not give us a more satisfacto
influence and action, the power and properties of the nerves and
he performed such wonders, than Vestris could? who, whilst he
such excellence, did not, perhaps, know he had them. In this our
Sir, we are not poets nor dancers, but anatomists."

year the new-married couple (1792) visited Paris. Mr. Cooper's
nt inducement was the opportunity which the visit would afford him
paring the Parisian and London practice of surgery. But young
was a democrat of rather a deep dye, and the political scenes
were then passing on the great theatre of Paris possessed no little
on for his ardent mind. He attended the meetings of the National
bly, and heard the violent harangues of Danton, Marat, Robespierre,
er leaders of the sanguinary revolution then enacting. Whatever
pression on Mr. Cooper may have been at the time, it is certain that,
s return to London, "he manifested the same political bias which
d him before his excursion to Paris."
es, however, did not entirely engross Mr. Cooper's attention. He
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'His reading was not extensive, and therefore his knowledge was in a great degree his own, excepting that he had learned human anatomy from Mr. Cline, and the principles of physiology and surgery from Mr. Hunter, which he always possessed a remarkable facility in understanding and applying to use.

'By his scientific researches and mental energies, the Veterinary College attained a degree of usefulness and celebrity, which exceeded his most sanguine expectations.

'Under his fostering auspices the progress of the veterinary art was such, as to qualify its practitioners to hold commissions in the army; and he had himself the honour to be appointed Veterinary Surgeon-General to the British Cavalry, the duties of which post he performed with the most laudable fidelity, and with such advantage to his country, that the number of lives of horses saved by his means was immense.

'His scientific views and high character, made him thought worthy of being elected a Fellow of the Royal Society, and of several other scientific associations.

'In society he was a cheerful and delightful companion, and was on terms of intimacy with Jenner, Woodville, Dr. Cooke, Dr. Wells, Dr. Babington, Mr. Abernethy, Dr. Clarke and his brother, Sir Charles Clarke, Sir F. Chantrey, Sir C. Bell, Sir B. Brodie, Mr. J. H. Green, Dr. Bright, Dr. Paris, Dr. Crawford (the author of the work on Animal Heat.) and many other choice spirits and intellectual persons. Whatever is a man's pursuit in life, it is knowledge and moral character which give to him his real rank and position; and in proportion as he possesses these, so will he be welcomed in society, respected, and beloved.

'In old age, Mr. Coleman became afflicted with the gout; his liver became diseased; his stomach weakened: and he died at the Veterinary College, on July the 14th, 1839, in the seventy-third year of his age, after a life of great gratification and extensive usefulness, respected by all, and most regretted by those who knew him most intimately.

'He left behind him three daughters, all married, in whose hearts the fondest, and most grateful recollection of his parental affection and undeviating kindness will be for ever cherished." 191.

The period between 1788 and 1791, is nearly a blank in the life of Sir Astley. It was about the beginning of the year 1789, that he was appointed Demonstrator of Anatomy at St. Thomas's School, in the place of Dr. Haighton, who resigned and took the degree of M. D. In 1791 he became co-lecturer with Mr. Cline though the time of his pupilage with the latter had not expired. He was to receive 120 pounds per annum, and 20 pounds additional every year until he got one-half of the emoluments of the professorship. This was no bad start. With some difficulty, and in opposition to the opinion of Mr. Cline himself, Mr. Cooper effected the disjunction of anatomy and surgery, forming them into distinct courses, and taking the surgical lectures to himself.

Mr. Cline had more than one reason for hastening on the promotion of young Cooper. A particular friend of his (Mr. Cock), had a beautiful and only daughter, whom he seems to have singled out as the future cara sposa of the young medical aspirant. Mr. Cooper was to have been married to Miss Cock, on the 25th November, 1791; but the lady's father died on that very day, and the nuptials were deferred till nearly a year after the bereavement. Mr. Cooper and his spouse inhabited a house in St. Mary Axe for several years after their union. Mrs. Cooper, is represented as of a most modest, retiring, and cultivated mind, joined to excellent judgment, and domestic virtues.

Next year the new-married couple (1792) visited Paris. Mr. Cooper's apparent inducement was the opportunity which the visit would afford him of comparing the Parisian and London practice of surgery. But young Cooper was a democrat of rather a deep dye, and the political scenes which were then passing on the great theatre of Paris possessed no little attraction for his ardent mind. He attended the meetings of the National Assembly, and heard the violent harangues of Dahton, Marat, Robespierre, and other leaders of the sanguinary revolution then enacting. Whatever the impression on Mr. Cooper may have been at the time, it is certain that, after his return to London, "he manifested the same political bias which possessed him before his excursion to Paris."

Politics, however, did not entirely engross Mr. Cooper's attention. He attended lectures and walked the hospitals of Paris, and draws sketches of some eminent chirurgical characters of that day, as Desault, Chopart, &c. But these sketches are very few and faint. Mrs. Cooper, who was now in that happy state "in which ladies wish to be who love their lords," was anxious to leave Paris, and, after some difficulty, they got away, and reached Old England.

The future Baronet now encouraged pauper-patients to come to his house for advice—not with the view of acquiring private practice through that medium, but to obtain a familiar knowledge of disease, and ascertain the effects of remedies prescribed by himself. These, indeed, are the legitimate objects of gratuitous home practice, and we doubt whether it leads materially to attendance on the affluent, except by qualifying us for the task when we come to perform it. Besides the emoluments of his lectures, Mr. Cooper got fourteen thousand pounds with his wife, which rendered him almost independent of his professional avocations. Three years were thus spent in pauper-practice and hospital attendance.

In the second year of his lectures, his class diminished by 25, as compared with the first year. This was alarming as well as mortifying. He had adopted the principles, and of course the terms of John Hunter, and these were not very intelligible to his pupils. He therefore changed his plan. He selected the cases of disease, and the casualities from the two hospitals, and bringing such of them before the notice of the pupils as would illustrate the subject on which he was lecturing, thus pointed out the nature of the disease, the appropriate treatment, and theory which directed that treatment. In short, Mr. Cooper combined clinical with formal doctrinal instruction, and the success was soon evident. "From this moment his class increased." Those (and they are many) who attribute Sir A. Cooper's brilliant career to good fortune and good address, had better reflect on his unwearied industry, unconquerable zeal, and judicious conduct, when they will see other causes in operation than LUCK.

In 1792, Mrs. Cooper was delivered of a female child, and Mrs. C. recovered. It is curious that, after the scenes which he witnessed at Paris, Mr. C. should "go a step beyond Whiggism, and become a member of the 'REVOLUTION SOCIETY,' founded in commemoration of ours in 1688." There can be little doubt that, long ere Sir A. carried away the steatome from a Royal pericranium, he had abandoned not only "Revolutionary Societies," but the society of Revolutionists!

In the Summer of 1793, the infant daughter of Mr. Cooper evinced symptoms of serious disease, and a cottage at Pentonville was taken for fresh air, whither the parents daily repaired, to watch the child's health. In this year Mr. C. was elected as lecturer on anatomy at Surgeon's Hall. In October (1793) he was gratified by a numerous class at his lectures in the Borough. In this session Thelwall read a paper on materialism which gave rise to great discussion, and ultimately to Thelwall's secession from the Physical Society. This event seems, fortunately, to have broken the chain of connection, though it did not sever the ties of friendship between Mr. Cooper and the Materialist.

In March 1794, Mr. Cooper lost his infant daughter, aged twenty months, by hydrocephalus, to the great grief of her parents. The child had been under the care of the late Dr. Lister. Soon after this Mr. Cooper adopted an infant female at Hornsey and reared her, with all proper accomplishments, till she became the wife of Mr. Parmenter, but died soon after her marriage.

In 1796, Mr. Cooper accompanied Mr. Gawler on a duelling excursion to Hamburgh, where a hostile meeting took place between that gentleman and Lord Valentia, the latter being wounded. On his passage home they had some rough weather, and young Cooper was so sick, and also so frightened, that he actually became delirious through terror!—Strange contrast to the devil-may-care recklessness which he formerly exhibited when in real danger!

In May 1797, Mr. Cooper removed from Jeffrey's Square to St. Mary Axe—the residence of his former preceptor, Mr. Cline. Here he employed the late J. C. Saunders as his private dissector and public demonstrator. In 1798 he had a fall from his horse—received a concussion of the brain—and nearly died. After his recovery he formed a private medical society, which afterwards published a volume, entitled "Medical Records and Researches," two of the articles being by Mr. Cooper himself—the others by Dr. Haighton, Dr. Babington, and some friends. The publication commenced and ended with this volume. Another association was now formed—the "Edinburgh Club," whose members met monthly at each other's houses, for the purpose of exhibiting specimens of morbid anatomy and the history of cases. This club contained the names of several of the stars of that period, Yellowly, Murray, Willan, Aiken, Farre, Travers, Bateman, Curry, &c.

Up to the year 1800, when Mr. Cooper was elected surgeon of Guy's Hospital, his professional income, (had there then existed a tax) would not have overflowed the exchequer of the Chancellor.

"My receipt," says he, "for the first year was 5*l.* 5*s.*; the second, 26*l.*; the third, 64*l.*; the fourth, 96*l*; the fifth, 100*l.*; the sixth, 200*l*; the seventh, 400*l*; the eighth, 610*l.*; the ninth," (the year he was appointed surgeon to the hospital,) "1100*l.*" He himself appends a remark, which sufficiently shows his feeling on this subject:—'although I was a lecturer all the time on anatomy and surgery.'" 290.

The slowness of this march in the guinea trade seems surprising; but if the private fee-books of many of our first-rate doctors and surgeons were brought to light, Sir Astley's career, *at the beginning*, would not be without parallels—though at its zenith it would shine.

——————"velut inter ignes
Luna minores."

As the election for Guy's Hospital approached—or rather before that period—both Cooper and Coleman began to regret the part they had taken in politics, and, in fine, recanted their democratical sentiments. This cleared the way for Cooper's appointment to the hospital, which took place in October 1800. His contemporaries at Guy's were now Foster and Lucas, surgeons—Saunders, Ralph, and Babington, physicians. At St. Thomas's Hospital, the surgeons were, Chandler, Birch, and Cline—the physicians, Fordyce, Blane, and Crawford. Cline and Cooper appear to have gained more reputation by helping their colleagues out of scrapes, than by their own operations. Sir Astley has left some characteristic sketches of his colleagues in the Borough, and his biographer has added several of his own; but these we must pass over, in order that we may carry out a connected narrative of the life of Sir Astley.

In 1800, Mr. Travers was articled to Mr. Cooper—resided some years in his house—and became a favourite pupil. It was in the same year (1800) that a celebrated character made his debut on the stage in St. Mary Axe—no less than CHARLES, whose name was Osbaldeston—softened down, by way of euphony, to BALDERSON. To the great majority of Sir Astley's patients CHARLES was as well known as himself, and never had physician or surgeon a more expert servant at opening the door of the SANCTUM SANCTORUM, with a look that could not be mistaken, signifying —"Madam or Sir, you have been in long enough: please turn out, and make room for others." Many a rough, or rather tough customer had Charles to deal with daily in St. Mary Axe and Spring Gardens! But he managed them cleverly, and his place was neither sinecure nor sine argento. Charles had more than two strings to his bow. He had a house in the neighbourhood of the Strand, were operations were performed by Sir Astley, and the patients carefully attended to by himself. He was a prime hand at catching dogs and other animals, per fas aut nefas—in securing rare specimens of fish at the markets—in short, of doing every thing which was conducive to the scientific pursuits of his master. Even MICHAEL, the Jew-coachman, entered into the philosophic spirit of Sir Astley, and, on one occasion, lost a seven-shilling handkerchief in trying to secure a pretty little dog that he met in Camomile Street. He charged the item in his next week's bill: but Sir Astley did not allow it *

The biographer enters into a long and a very curious, as well as amusing detail of the connection which, in those days, subsisted between the anatomists and the resurrection-men. The subject has now, happily, lost much, if not all its interest with anatomical lecturers, and professional men; but it will be perused with various feelings, by the public at large. We cannot therefore join in the condemnation which has been raised against this part of the work. It ought to excite very general feelings of

* Michael was more successful with the writer of this article, for he sold him one of Sir Astley's horses for £30., though he was not worth thirty shillings!

gratulation that the necessity for such resurrectionary movements has been done away by judicious legislative enactments.

In 1800, Mr. Cooper communicated to the Royal Society a paper on the operation of puncturing the membrana tympani, which then excited great attention and promised to be of great importance; but has not since answered the expectations either of the proposer or the profession.

"Unfortunately, the relief thus obtained was, in many instances, evanescent; for either the aperture became closed, or ulceration went on to the destruction of the whole membrane of the ear, leaving the patient in no better condition than he had been before the operation. It is singular that the first gentleman on whom he operated, a person from Gloucester, retained his perfect hearing from the time of the operation until his death: but it proved to be the only case occurring to Mr. Cooper, which could be described as permanently successful, although many were relieved." *Vol.* ii. 7.

The Royal Society, however, awarded Mr. Cooper the Copleian medal for his communications—the highest honour they could bestow. Two years afterwards Mr. Cooper was elected a Fellow of this Society.

Mr. Cooper was a good deal instrumental in the formation of the Royal Medico-chirurgical Society, which was instituted in 1805, and is now one of the most flourishing societies of the kind in Europe. In the first volume of its transactions (1809), Mr. Cooper published his celebrated case of operation for aneurism of the carotid artery—which, though unsuccessful, has led to many similar operations since that period which have had the most happy results. Mr. Cooper furnished the Society with several other interesting papers. Mean time he was privately engaged on his great work—the "TREATISE ON HERNIA"—which alone would have immortalized him. He devoted immense labour and long time to this undertaking, in order that the subject which it involved might be fully and perfectly considered. Although every copy was sold, Mr. Cooper was more than a thousand pounds out of pocket, on account of the expense of the plates, which were magnificent. Mr. Hey, of Leeds, who had written on the same subject, but differed from Mr. Cooper on some anatomical details, came to London, in order that he and Cooper should dissect the parts together. He went home convinced that Mr. Cooper was right.

In 1806, Mr. Cooper removed from St. Mary Axe, to New Broad Street, in the city, where his house afforded excellent accommodation to the numerous patients who now attended his morning levees.

Mr. B. Cooper here makes a digression as to his own early career. He took a fancy to the sea; but a three months' cruise off the Texel, watching the Dutch fleet, in the winter season, so *sickened* the young midshipman, that he quitted the wooden walls on the first opportunity, after returning to Yarmouth. He was destined for a more useful though not more honourable profession. After some farther academic studies, he entered the medical department under the auspices of his uncle, and after a campaign or two in the Peninsular war, settled down in the path—and even in the house—of his great patron and relation.

Mr. Cooper's description of a day's routine of the indefatigable Astley is very amusing as well as interesting. He started from his couch at six o'clock, Summer and Winter—worked in his dissecting room till half-past seven—began to see his gratuitous patients at half-past eight—occupied a

few minutes afterwards at breakfast, consisting of two well-buttered hot rolls, and a large draught of nearly cold tea—then entered his consulting room, where he saw patients till one o'clock.

The following is a scene from real life—and would make an excellent one in a drama.

"The arrangement of the rooms in Broad Street, was excellently adapted for the purposes to which they were applied. A large hall, an ante-room, and the consulting room, were in a direct line from the street-door; to the right of the hall were two large rooms, which were occupied by gentlemen patients; while two drawing-rooms immediately above, were appropriated to the reception of ladies. The hall had generally servants waiting for answers to notes for professional appointments; the ante-room was intended for the one or two patients who were next in succession to the patient then with Mr. Cooper.

"The further room, on the right of the hall, which was the family dining-room, was generally full, from ten till twelve, of gentlemen waiting for their turn. These were anxious, perhaps, but still in a much less pitiable state than the occupants of the first room to the right. All who were admitted into this room had undergone some kind of operation, which had unfitted them for the present to leave the house. It was certainly an object of interest, at times partaking no little of the ludicrous, to me, as an inconsiderate youngster, on going into that room, to see six or eight persons, who had never set eyes upon one another before, contorting their features into expressions of all the kinds of suffering, from the dullest torment to the most acute pain; others moving in anxious restlessness to different parts of the room; while some one, more inquisitive than the rest, would be asking his neighbour with eager curiosity what was the nature of the infliction he had undergone, still writhing, perhaps, under the effects of his own. These patients used to remain in this room until either their pain had ceased, or Mr. Cooper himself dismissed them, after completing the operation to which they had been subjected.

"The patience of the ladies, perhaps, was somewhat more severely tried than even that of the gentlemen, for as, in Charles's judgment, their occupation was not likely to be so important, nor their time so precious, he was accustomed rather to expedite the admission of the gentlemen than theirs. He most ungallantly used to observe, 'there was more difficulty in drawing one lady than two gentlemen:' meaning to imply by his term *drawing*, the succeeding in withdrawing the lady from Mr. Cooper's presence. The manner by which the ladies exhibited their impatience was by frequently opening the drawing-room door, peeping over the banisters, or sometimes coming down into the hall and supplicating Charles to get them a speedy audience; requests which he knew well enough how to answer appropriately to the peculiar temperament of each applicant.

"The ante room was sometimes applied to another purpose than the legitimate one of merely facilitating the regular succession of patients, for Charles had some few chosen friends, who knew how to pay their way into this room at once, without going through the more tedious ordeal of the usual waiting-room." 74.

"Thus the patients were introduced in quick succession; I say quick, because the rap at the door of Charles—ever watchful of his master's interest, and not altogether, perhaps, forgetful of his own—and his exclamation, 'a gentleman, Sir,' were generally signals to depart, which Mr. Cooper's Janus invariably made, as soon as he thought his master's time had been sufficiently occupied by the patient then with him." *Vol.* ii. 75.

At one o'clock, or very soon after, he jumped into his carriage—galloped to the hospital—rushed through a hundred students—traversed the wards, making clinical remarks, which were greedily swallowed by a host

of pupils—and then to lecture at 2 o'clock. The lecture lasted one hour, and at half-past three he left the hospital to commence his out-door rounds till dinner-time.

At dinner he was cheerful, but "did not eat with epicurean elegance." He bolted his food with "remarkable rapidity," drinking two or three tumblers of cold water in quick succession, and seldom taking wine during the repast. Directly the cloth was removed, he would swallow hastily a couple glasses of port wine—and the next instant he would be fast asleep in his arm-chair. In ten minutes he would awake—get into his carriage, and visit patients till twelve o'clock at night!

It was, we think, in 1807 (for Mr. Cooper is not very clear in his dates) that the uncle procured for his nephew an assistant-surgeoncy in the Royal Artillery, where he remained eight months, before he went to the Peninsula, attending lectures in the mean time in London.

Mr. A. Cooper had the art of detecting abilities in a remarkable manner, and he had many *employés*, literary, pictorial, and scientific, who worked hard in his private dissecting-room, or SANCTUM SANCTORUM, under the master-mind of the great man. No person had access here, except the victims and the victimisers—and many a strange scene, no doubt, took place in the room over the stables. They were all, however, in pursuit of science; and though not always strictly *legal*, in as far as the brute creation was concerned, they all tended to the benefit of the human race. Among these *employés*, Mr. Lewis appears to have been "a man of all work," literary, professional, and scientific. He was Sir Astley's carriage companion, and could write there as fast as Sir A. dictated—took notes of all cases, public and private,—and, in short, was a most valuable assistant.

His practice went on regularly increasing, as his fame extended. In the year 1808 or 9, he met with an accident as he was walking along Cannon Street, he slipped from the curb-stone and fell, one of his feet getting jammed in some ice. The fibula was broken and he went home in a coach. Mr. Travers was sent for; but Mr. Cooper would not permit him to handle the limb, merely keeping it quiet and wet. Notwithstanding his abstemiousness, he had occasional parties in Broad Street, and went out sometimes to the parties of others—but never took more than his usual couple of glasses of wine. His natural hilarity and flow of spirits rendered all exciting drink entirely unnecessary. His visitors were almost entirely medical or surgical—often his pupils. The following remarks on John Hunter were found among his notes.

"'His theories were generally excellent: his practice not very good; for all his treatment of disease was much his own, and not confirmed by experience. It was founded upon theory, instead of his theories upon his practice.

'He was singular in his manners and opinions, and often exhibited the simplicity of a child, in the remedies he prescribed.

'A person had a swelling in his legs, and consulted him, and he said:—"I know nothing better than cabbage-leaves, which I have heard produce great perspiration, and they will sweat your legs down."

'Mr. Howden had a patient with an obstinate running sore, and he said, "We will consult Mr. Hunter about your case." As they walked from the city to Mr. Hunter's, the patient said to his medical attendant, "What must I give Mr. Hunter?" and he answered, "Two guineas to such a man."

'They went into Mr. Hunter's room, and the case was explained. Mr. Hunter

folded his arms, and said:—"And so, sir, you have an obstinate running sore!" "Yes, sir." "Why then, sir," said Mr. Hunter, "if I had your running sore, I should say—Mr. Sore, run and be ——."

"Mr. Cooper concludes his remarks by the following observation:—'A surgeon in London was paid by one of the first practical surgeons of the day, to write down Mr. Hunter. It was a rat assailing a lion—or a pigmy attacking a giant.'" *Vol.* ii. 164.

Mr. Cooper's prescriptions were very simple. He had five or six formulæ, which constituted the whole of his Pharmacopœia. These he kept ready made to distribute among his morning gratuitous patients. "Give me (says he) opium, tartarized antimony, sulphate of magnesia, calomel, and bark, and I would ask for little else." Sir Astley, however, was a much better surgeon than physician, otherwise he would not have been contented with such a scanty catalogue of medicaments.

In the month of May, 1813, Mr. Cooper was appointed to deliver lectures on comparative anatomy at the Royal College of Surgeons. Notwithstanding his immense practice, public and private, he prepared himself for his task by almost superhuman labours—often limiting himself to three or four hours sleep at night—and performed the duties with great eclat. In the year 1815, his professional income amounted to the enormous sum of TWENTY-ONE THOUSAND POUNDS!! He had now, however, begun to show symptoms of obesity, and, one day, while the Duke of Manchester was consulting him, he fell down unconscious on the floor. He soon recovered, and the secret of the attack was religiously preserved. He had returns of the complaint, more or less marked, together with irregularity of the heart's action, during the remainder of his life.

About this time Mr. B. Cooper returned from his Peninsular campaigns, and found that Mr. Cooper had despatched some of his favourite pupils, viz. Mr. Callaway, Mr. Tyrrell, Mr. Henry Cooper, and Mr. Key, to Brussels, to assist in attending our wounded soldiers from the field of Waterloo, and in which humane office they distinguished themselves. Mr. Bransby's brother (Henry) being now in great favour with the great patron, Mr. B. was advised to graduate at Edinburgh as a physician, and had completed his studies for that purpose, when his brother died, and Mr. B. returned to the study and practice of surgery under the auspices of his uncle.

It was in the year 1815 that Mr. Cooper removed from the city to New Street, Spring Gardens; not for the purpose of increasing, but of restricting his practice, and improving his health. In the Spring of the following year (1816) he performed his celebrated operation at the hospital, of tying the aorta. The operation did not succeed; but it was performed with the most perfect adroitness, without injuring any important part, and with the effect of prolonging the life of a man, who was in *articulo mortis*, from hæmorrhage, for 46 hours. The merits and demerits of the procedure were canvassed all over Europe, at the time, and we are of opinion that the surgeon was perfectly justifiable, under the then existing circumstances.

In 1817, Mr. Cooper became domiciliated with his uncle in Spring Gardens, and he was appointed dissector for lectures, in conjunction with Mr. South. Mrs. Cooper now resided permanently at their estate in

Gadesbridge, and Mrs. Bransby Cooper undertook the management of the house in New Street. In 1818, Messrs. Cooper and Travers published the first part of their surgical essays, which became very popular, and spread the fame of their authors still wider. In 1820, Mr. Cooper and Dr. Babington attended their friend, Dr. Marcet, in his last and fatal illness, whose death caused great grief to his medical attendants. Mr. B. Cooper has here introduced a short biographical notice of Dr. Marcet, which we must pass over, in order not to break the thread of the narrative.

It was about this time (1820) that Mr. Cooper was in attendance on Lord Liverpool, and on whom he continued to attend till the death of that nobleman. It was probably through the influence of the premier that Mr. became ultimately Sir A. Cooper, and attended on royalty itself. The following note respecting Lord Liverpool, we shall quote.

"I attended Lord Liverpool first for an inflammation of the veins of his leg, with Dr. Pemberton. After this, &c.

"The next circumstance of professional interest which occurred to him, happened as he was walking up Downing Street, when he felt an oppression upon his breath, and his pulse, which had been *seventy-six* in the morning, fell to *thirty-eight* in the afternoon. It varied between *thirty-eight* and *forty-four* ever afterwards, that is, for five or six years. If he went to the House of Lords, and spoke violently as to his action, [which he was wont to do, so that he was obliged to change his linen,] yet his pulse remained the same. Dr. Drever frequently accompanied him to the House of Lords, and remained in a room in case of any sudden illness.

"This peculiar sluggishness of Lord Liverpool's pulse became its ordinary condition. I once saw a man with Dr. Cholmeley and Mr. Stocker, whose pulse was twenty-eight or twenty-nine in a minute, was on more than one occasion only fourteen, and once thirteen in a minute. He was treated as having congestion about the heart, and he recovered." 218.

Had his Lordship's medical attendants examined the action of the heart in the above states, they would have found that the left ventricle acted twice for the pulse one—one of the strokes being too weak to tell on the radial artery. This we have verified in two or three instances of extremely slow pulse. In Lord L.'s last illness, Mr. A. Cooper was out of town, and Mr. Bransby attended in his place. His Lordship was lying apoplectic on the floor just after breakfast. Dr. Drever was in attendance, and it was agreed to bleed the patient immediately. This was done, and his Lordship seemed somewhat relieved, but did not speak. Shortly afterwards a state physician, whom it is needless to name, came in, and, "making three profound formal bows to Lord L. as he lay senseless on the sofa, turned to Mr. Cooper and asked him '*if he were aware of the responsibility he had taken upon himself in bleeding the Prime Minister of England before his arrival.*" The Quarterly Review has remarked on this passage with some degree of cynicism. We may here introduce an anecdote of Dr. Sir E. King, not in the work before us.

"Here also are the portraits of Sir Edmund King * * * King was one among the philosophers of his time to exhibit the experiment of the transfusion of blood. He caused, for instance, the blood of a young dog to be transfused into the veins of one almost blind with age, and which could hardly move: in two hours it began to leap and frisk. It was probably while exhibiting some of these experiments before Charles II, who had a taste for experimental philosophy, that

the king suddenly fell on the floor as if dead. Dr. King, without waiting for the advice of the royal physicians, which must have come too late, boldly put aside the danger to himself in case of failure, and immediately bled the monarch, who then recovered his senses. The Council ordered him a reward of a thousand pounds for this service."—*See* '*London*,' (*Knight and Co.*) *No.* 27, *p.* 28.

Sir A. Cooper was sent for, and the Premier was again bled, but he died. A clot of blood was found effused on the brain.

It was in this same year (1820) that Sir Astley was called into attendance on George the Fourth, in consultation with Sir E. Home—Sir B. Brodie and others. Sir Astley declined operating on the crowned head, and preferred that the Sergeant Surgeon—Sir E. Home—should take the post of honour.

"On the next day Home wrote to me that he should do the operation on Wednesday, and I requested that Cline might be present, to which Home consented. On the Wednesday we all met, Halford, Tierney, Home, Cline, Brodie, and myself. Mr. Cline said, 'Who is to do the operation?' I said, 'Sir Everard.' Soon afterwards, Sir Henry Halford was called out of the room, and almost immediately returning, said to me,—'You are to do the operation.'

"I was thunderstruck, and felt giddy at the idea of my fate hanging upon such an event. I said, 'I have not come provided with instruments.' There was no time for parlance, for the King directly entered the room, and said—'Where am I to sit?' I replied, 'Here, Sire,' taking a chair to the window, and, begging an instrument of Home, I made an incision into the tumour, and emptied it of its contents. Then I found that it adhered strongly to the scalp, and upon the side on which I stood, which was about three-fourths of its size, I with difficulty detached it from the skin without cutting the skin itself. On that side on which Cline stood, I begged him to detach it, which he did, but it took up a great deal of time on the whole. The edges of the wound were brought together, and lint and plaister applied.'

"The King bore the operation well, requested that there might be no hurry, and when it was finished, said, 'What do you call the tumour?' I said, 'A *steatome*, Sire.' 'Then,' said he, 'I hope it will *stay at home*, and not annoy me any more.'

"The King went on well until Saturday: when he came into us, he said, 'I have not slept all night, and I am d——d bad this morning; my head is sore all over.' I immediately thought erysipelas was coming on, and that we should lose him. I called in the middle of the day at Carlton Palace, and again in the evening, and he was much the same.

"The next morning when I went, the King was on the sofa,—his great toe was red with gout,—and his head had lost its soreness, and all its unpleasant feelings. From this time the wound healed in the most favourable manner." *Vol.* ii., 230.

The Baronetage followed, as a matter of course—and "a beautiful epergne which cost five hundred guineas." Sir Astley was now at the summit of his ambition. He had scalped—or at least scalpelled, the head of his sovereign, and stood at the head of surgery in his native land!

The operation above-mentioned was not undertaken without fear and trembling, lest his giddiness should lead to a fit in the royal presence. He also had a great dread that erysipelas should supervene on the wound—and that should any accident occur his reputation would be ruined!—How blinding as well as enervating is fear! Sir Astley's reputation was too well founded to be destroyed by the death even of a king. Dr. Croft's was

a very different case. He ought to have had some of his brethren with him to divide the responsibility—and he had not nerve to do the needful with promptitude.

In 1822 Sir A. was appointed an examiner at the College of Surgeons. In this duty Sir Astley was conspicuous, not less for his urbanity than for the strictness with which he tested the real acquisitions of the candidates for the diploma.

In this same year appeared his great work on "*Dislocations and Fractures of the Joints*," part of which had previously appeared in his Surgical Essays. This work, of course, was worthy of the author, and stamped him as complete master of his subject. In 1824 Sir Astley's health became impaired—his giddinesses more frequent—and difficulty of breathing was a concomitant of the vertiginous affection. He always found benefit, however, by his excursions to Gadesbridge, and felt the beneficial influence of change of air by the time he arrived at Edgeware. In Jan. 1825, therefore, he gave up lecturing entirely. He did not, however, recede from the school, without a full understanding that Mr. Key and Mr. Bransby Cooper should succeed to his duties. He was jilted; and, immediately on receiving such an insult, a separation of the two hospitals took place, and Guy's School was established. It is needless to say that the above-mentioned gentlemen were appointed to the new, and flourishing school. He now became consulting surgeon to Guy's Hospital, and retired from the important duties of senior surgeon.

He now spent a considerable portion of his time at his country-house, and frequently entertained his old friends, Dr. Babington, Mr. Coleman, Dr. Marcet, Mr. Cock, and others. Dr. Babington was the "fiddle of the mess," on account of his humorous Irish stories. We have heard him retail many of them, and confess that we considered most of them as somewhat stale and humourless, whilst many of them were new editions, not always improved, of Joe Miller.

The attendance of Sir Astley Cooper on the Duke of York supplies his biographer with many anecdotes, which we must pass over. This was in 1826.

In 1827, Sir Astley met with some mementos of the chequered scenes which we are doomed to undergo in this life, especially if it be protracted. The death of his old master, Mr. Cline, affected him much, though they had been a good deal estranged from each other, since the separation of the Borough schools. We shall introduce the following short passage from Sir Astley's notes respecting Mr. Cline.

"Mr. Cline thought there was a cause superior to man,—a prevailing law, influence, or deity,—but believed that nothing was known of the future. The only clergyman with whom he was intimate, was Mr. Draper, the democrat.

"In his politics, he was highly favourable to the French Revolution in all its eccentricities, as well as in its principle; though its cruelties his nature would have shuddered at. His character was that of Washington; he would have devoted himself to what he considered the advantage of his country, and surrendered whatever distinction he might have attained, when he had accomplished his object.

"As an operator, he was slow by nature, and from principle. I once heard him say that Martin, a surgeon of St. Thomas's Hospital, by his hasty mode of proceeding, did more harm in five minutes than he could repair in an hour." 338.

But the greatest blow was the death of Lady Cooper, his wife, which took place in June 1827, by mortification in the foot, after erysipelas in the head. Sir Astley was inconsolable—but in less than thirteen months, the first Lady Cooper's loss was repaired by a second—formerly Miss Jones, to whom Sir Astley was married in July 1828. Sir A. had retired from practice, and determined to live "*in otio cum dignitate*," on his estate at Hemel Hempstead; but ennui took possession of his mind, and he returned into harness in less than a year after his adoption of a country-life!! Sir A. was made Sergeant-surgeon to the King (1828) on the death of Sir Patrick M'Gregor; and two years after that period, his Royal Patron himself was gathered to his forefathers!

Pallida mors equo pede pulsat, pauperum
Tabernas, Regumque turres.*——

Sir A. was not a reading, but an active man. Rustic seclusion could not agree with such a temperament, and he has told the writer of this article that, had he remained much longer at Gadesbridge, he would have been found, some morning, hanging to the branch of one of his own trees!

In 1830, Sir Astley and Lady Cooper made an excursion up the Rhine as far as Frankfort and Heidelberg; but his diary is a very meagre performance, and we shall pass it over. In 1832 he dedicated his work on the thymus gland to Dr. Babington, who shortly afterwards paid the debt of Nature, at his house in Devonshire Street. The following brief character of this most amiable and benevolent physician is drawn by Dr. Bright. After dwelling on his sweet simplicity, his judgment, his benevolence of heart, professional skill, &c., he concludes by saying:—

"Such are a few, a very few, and feebly drawn characteristics of this truly great man; this almost perfect physician; an honour to our College; an ornament to our profession. No man ever passed more hours in the conscientious discharge of duty; no man by his professional exertions ever did more good; no man ever acted less under the immediate impression of self-interest. The comeliness of virtue will ever be felt and acknowledged by all whose estimation is worth the good man's desire. With regard to our departed friend this has proved the case; for no man was ever more extensively beloved; no man's example has had more weight: to no one are we more indebted for supporting and exciting amongst us a high tone of moral feeling." 389.

About this time Sir Astley received honorary titles and diplomas from various parts of the Old and the New World, so that he might now have been almost tired of honours.

In the Summer of 1834, Sir A. made another and a more extended tour on the Continent, in company with Lady Cooper and some members of the family. The writer of this was one day walking down the principal street of Berne, when he saw a tall and fine figure walking leisurely down the middle of the street, looking up on both sides at the ladies in their

* "At palace gate and cottage-door
Death knocks alike, nor long nor loud!
The shuddering tenant, rich or poor,
Next morn lies folded in his shroud."

balconies and at the windows, whence they eyed the handsome and elegant stranger with no small curiosity and admiration. The writer, in his blowse jacket, and travelling cap, with a complexion like mahogany, from exposure for months among the Alps and Appenines, soon recognized his old friend and preceptor, and tapping him on the shoulder, accosted him familiarly—"How do you do, Sir Astley?" The worthy Baronet could not, in the slightest degree, recollect a single feature of his friend, till he announced himself by name, when Sir A. could scarcely bring himself to believe that it was the pale sickly dyspeptic whom he was in the habit of seeing in the vortex of London. If Sir A. had pursued the steps of a tourist, through the mountains, instead of prying through hospitals, and routing up musty museums, he would have probably added a few more years to his life.

In the year 1840, appeared Sir Astley's last publication—"the ANATOMY OF THE BREAST," printed in quarto, and accompanied by beautiful plates. This work afforded the climax to his industry, zeal, and talents, and will remain a monument to his fame, "ære perennius."

The anatomy of the mamma was intended as the prelude to an extended work on the *diseases* of that important organ—but, alas! this was never to be executed by the same able hand! Sir A. still remained subject to the giddinesses so often alluded to, though in a subdued degree; and they were dispersed by attacks of gout, to which he was now often obliged to submit. Sir A. was under the constant impression that he would live to a very old age, and thus be able to bring forward many other professional works!

In 1835, when Sir A. was turned of 65, a report was spread that he died suddenly in the Isle of Wight. The following is an answer to his nephew's letter, inquiring if the alleged fact were really true.

"My Dear Bransby, *Weymouth, Sept. 23d*, 1835.

"It is with much self-gratification that I assure you that I am not *dead*, and that the only fit I have had is a fit of hunger, to which disease I have been extremely liable ever since I was born. Indeed, it is my full intention to practise my profession for the next thirteen years: after that time to retire for twenty, and then to be at God's disposal for as many more as He pleases.

"I suppose the false report has arisen out of Brodie's accident, whom I saw at Newport very well; but the injury he met with was severe, as the bone was reduced without a *snap*. It spoiled his rustication, as he quitted the Isle of Wight before ourselves. A very curious circumstance attended the accident. The horse on which he rode was John Jones's; and I tried it before it was sent to Tattersall's. It tripped, and nearly fell with me; and I would not buy it. Brodie's coachman bought it at Tattersall's for his master. I was additionally sorry for his accident on that account.

"Our journey has been to Portsmouth, Southampton, the Isle of Wight, Lymington, &c.

"Believe me, my dear Bransby,
Your affectionate Uncle,
ASTLEY COOPER."—Vol. II. 449.

Towards the latter end of the year 1840, Sir Astley's breathing became very laborious and distressing. He was obliged to avoid as much as possible every ascent, and made Mr. Balderson count the number of steps

to any patient's bed room (for he practised till the last) before he made the attempt. He closed his career as an operating surgeon, by performing an important operation on a lady of title, very shortly before his decease. At Christmas, 1840, he went, with Lady Cooper, to spend a fortnight, as usual, at the Rev. Mr. Board's, at Westerham. His host saw evident symptoms of his guest's declining health. His spirits were sunk, his energy gone, and the slightest corporeal exertion or mental excitement brought on the difficulty of breathing and change of countenance. He complained but little, however, for he always abhorred the idea of being thought ill. But at night he could not conceal his sufferings.

"Here he gave vent to his feelings, and sought relief from his sufferings by placing himself in those positions which most relieved him from the urgent distress inseparable from difficulty of breathing. His nights were sleepless, and were attended by a distressing cough and frequent paroxysms of suffering, which forced him continually to rise from his bed and pace the room, in order, if possible, to diminish the severity of his attacks. At last he was compelled almost entirely to relinquish the recumbent position, and to seek repose in an arm-chair." 451.

He was unable to return to town at the usual period, but gave out that he was merely prolonging his visit for another week!! He was, at last, prevailed on to return to town for the benefit of professional advice. He arrived in Conduit Street on the 24th of Jan. 1841, and Mr. B. Cooper was shocked at the change in his uncle's appearance, and that in the course of one short month! His hitherto Herculean frame was wasting down, and his countenance, that always exhibited the traits of health and happiness, now exhibited the expression of suffering despondency!

From the above date till the 1st of Feb. there was but little alteration in his symptoms. Sir A. was daily attended by Dr. Bright, Dr. Chambers, and Mr. B. Cooper. Although they considered their patient's case as dangerous, they did not view it as hopeless, and continued to prescribe active remedies, with the hope of relieving urgent symptoms; but with only very temporary alleviation. On the 2d Feb. some spots appeared on his legs, and Mr. Key and Mr. Tyrrell were called in, in addition to his other medical attendants.

"In this interview a melancholy interest was excited by observing how attentively he listened to the sentiments of each upon his case, which he insisted upon hearing. He seemed, indeed, carefully to weigh their respective merits, and I have no doubt correctly and judiciously estimated the value of each opinion. He readily submitted to the plan which was decided upon, although the remedies prescribed were of a most active character. I called that evening at ten o'clock, and remained with him until twelve, and, during part of this period, he suffered from a most distressing and protracted paroxysm of difficulty of breathing, which was accompanied by extreme prostration of strength." 453.

The next day he seemed comforted by the visitation of the Rev. B. Cooper, who read to him for several hours. He had previously received the sacrament from the hands of one of the curates of the parish. On the sixth of Feb. the last lines Sir A. ever wrote were a note to his nephew, requesting the constant attendance of himself and his cousin, the Rev. Mr. Cooper. The physicians now met twice a day, but only to witness

the gradual failure of their patient's powers. On the morning of the 10th Sir Astley became reconciled to his fate, and declined taking any more medicine. He became weaker and more delirious, and on the 12th of Feb. 1841, he ceased to exist! He was 73 years of age.

Thus the curtain of death, though not of oblivion, closed over one of the greatest surgeons that this or any other country ever produced! He did honour to the land of his nativity, and his name will be transmitted to posterity in the annals of surgery.

The dissection was by no means satisfactory. The head, which evinced the first symptoms of disorder, was not examined. The heart, however, was the prime cause of the fatal termination. The minutes of the post-mortem are recorded in this Journal for July 1841, page 265. But we may just remark that the central organ of the circulation was hypertrophied and at the same time dilated, while the muscular fibres of the whole organ were "pale, flabby, and weak." The engorgement of the lungs was consequent on this state of the heart, as was the "general and extensive œdema of the lower extremities."

Having been acquainted with Sir A. Cooper for upwards of 35 years before his death—from having been one of his pupils—from having had frequent professional intercourse with him during the last twenty years of his life—from having read all his works, and heard a great deal of him from all quarters, professional and non-professional, we shall endeavour to draw up a succinct summary of the prominent features of his character.

RESUMÉ.

I. Sir A. was born and imbued with a remarkable vigour of body and activity of mind.

II. AMBITION was his ruling passion.

III. This ruling passion, conjoined with physical strength and mental energy, would have placed him at the head of any profession which chance or inclination assigned him. The combination which made him the leader in all juvenile sports, adventures, and dangers, would have made him a Napoleon or Wellington in war—a Pitt or a Peel in the Senate. It raised him to the summit of honours in surgery.

IV. Without being avaricious, much less sordid, he was fond of money—partly, perhaps, from the natural love of independence—partly as a means of gratifying his ambition, by the ability of procuring all things necessary for the attainment of his objects.

V. His industry was never surpassed; and could only have been sustained by a Herculean frame like his, worked on by insatiable thirst of knowledge.

VI. His temperance, in regard to wine and other stimuluting drinks was perhaps, unparalleled; but he fell into great errors, by the rapid manner in which he bolted his food, which was not half masticated.

VII. For aught that appears to the contrary, the subject of our biography was as little open to the seductions of VENUS, as to the temptations of BACCHUS. Whether this was owing to constitutional temperament, moral discipline, or religious principles—or all three, we cannot now ascertain. The constant activity of mind and body in the pursuit of knowledge left him little time for sensual indulgences.

VIII. In early life Mr. Cooper was a Radical—or something *more*—a Revolutionist. In mature age, Sir Astley was a Tory—or something *less*—a Conservative.

IX. In religion, the association with Cline, Thelwall, and others of that school, in all probability led to FREE-THINKING. In the intense application to medical studies, and during the turmoil of practice, we suspect that Sir Astley did not think much about the matter. His morals, however, were not merely unimpeachable, but of the highest order.

X. In his intercourse with his professional brethren, he was always kind, considerate, and charitable towards their errors—adopting the Christian maxim

"To hide the faults we see."

But in the bustle and hurry of miscellaneous prescription at his own house, Sir Astley was not always cautious enough to conceal or pass unnoticed, what he considered as MALA PRAXIS, or blundering treatment in others. In this respect, the late Dr. Baillie was a perfect model for imitation by the consulting physicians and surgeons of the metropolis and great provincial towns. Whatever he may have thought of the methodus medendi adopted by the practitioner who preceded him, he never let fall a syllable or the slightest hint or sign that he disapproved of the procedure previously pursued. Those patients, or rather IMPATIENTS, who appeal from their ordinary to the *consulting practitioner*, are very prone to misconstrue every word and even look of the latter into an indication that their case had been hitherto mistaken, and, of course, mistreated. Every man of honour or honesty ought to be especially on his guard against fostering the prejudices of these malcontents, and thus injuring the character of the profession at large. We regret to say that we have known many of those who pride themselves on a high sense of moral rectitude, give way to this vile system of detraction, by which the noble science of medicine is wounded in its most vital parts, and degraded in its character. This detraction is even carried into the public prints, and too often becomes the subject of legal proceedings!

XI. We need hardly observe that the subject of these memoirs was a prime favourite with the public, as well as with the faculty:—we may safely add, that he was not less so with himself. Few men had a better opinion of themselves, personal or professional, than Sir Astley Cooper. During a long acquaintance, we never once saw him enter a drawing-room, and pass a mirror, without casting a furtive glance of inquiry, not unfrequently mixed with a smile of approbation at a fine figure that seemed to return the compliment *through* the pellucid glass. So in a professional point of view, Sir A. entertained so profound a respect for his own opinion, that he generally preferred it to the opinion of others, and therefore, in nine consultations out of ten, his word was law.

XII. TRUTH, which is said to *lie* in a well, (though we never could see any lucid reason for the supposition,) was held in such veneration by Sir Astley, that he never placed confidence in any man whom he found to deviate from that cardinal virtue. We have known him *embellish* an anecdote, a bon-mot, or a humorous incident; but we believe that he adhered to the rigid and naked truth on all other points.

XIII. His devotion to science, and his indefatigable pursuit of knowledge,

rendered it, perhaps, impossible that Sir Astley's mind could become susceptible of keen attachment or friendship to an individual. Intense exercise of the intellectual powers is little favourable to deep culture or centralization of the affections. Sir A. had numerous friends and still more numerous admirers, but it is doubtful whether he entertained any very ardent friendship himself for either one or the other.

XIV. In respect to LOVE, his marriage in twelve months after the death of his wife, and when he had passed his "GRAND CLIMACTERIC," offers a rather equivocal proof of his wisdom, whatever else it may indicate. True, he had precedents innumerable for this procedure; but precedents in love, law, and physic—especially in the *first* and *third*, are not always followed with perfect safety. It may be urged, on the other hand, that Sir Astley had a very *fair* excuse for matrimony, considering the personal attractions of Miss Jones—and that long courtships, at all times, but particularly after sixty years of age, are somewhat hazardous!

XV. Sir Astley Cooper was a bold as well as dexterous operator. His ligatures on the carotids and aorta are sufficient illustrations. No man had a steadier hand, a keener eye, a sharper knife—or made a cleaner cut than Sir A. He did not finesse, or fritter away his time in dividing fibre after fibre, even in somewhat ticklish dissections. He generally "went the whole hog"—to the root of the evil, with a few strokes of the scalpel while his cheerful and animated countenance supported the confidence of the bleeding victim!*

XVI. Although more than half of Sir Astley's morning practice at home, was what is called purely *medical*, yet he did not keep pace on all points with the modern improvements in pathology, semeiology, or therapeutics. Auscultation was introduced into this country in the year 1818, when Sir Astley was about the age of 50, and, considering his zeal and energy, it is wonderful that he did not cultivate this, the most scientific branch of our art. The stethoscope apart however, his diagnosis of organic diseases of internal as well as external parts, was remarkably correct, and did great credit to his acumen and judgment.

XVII. Taking him all in all, it is very unlikely that the professional world will ever see among them such a master mind and master hand again, as Sir Astley Cooper. Not that his genius and talents will not find equals in every successive generation, but that the general elevation of medical education will prevent any individual in future from soaring high over the

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* We were under the hands of Sir A. Cooper and Mr. Guthrie, in some trying operations. It is not for us to say which we would prefer, *now* that the hand of one is cold and powerless. But we may state that these eminent masters of their art *were*

"Arcades ambo
Et *secare* pares, et *re*-secare parati."

Apropos, as to the sensations experienced during a cutting operation. Not one in 500 surgeons know what they are—luckily for themselves! We had formed a very erroneous opinion of them before we became acquainted with the scalpels of the above-mentioned surgeons. They are not pain; but a *burning* sensation, as though a fine stream of boiling lead were jetting on the parts.—REV.

heads of his contemporaries. Among a race of *pigmies*, there may be occasionally a full grown HOMO ; but among men, how rarely do we see a giant ?

XVIII. It is an ungrateful task to find fault with the last act of a great man. But we are constrained to do so in the present case. We acknowledge, with a noble Lord, that "every man has a *right*, (a legal one) to do as he likes with his own." But LAW is not always EQUITY ; and the rich man who bequeaths his wealth more in accordance with the *former* than the LATTER, is not entitled to post-obit praise on this point. The last and testamentary act of Sir Astley Cooper proves the truth of our assertion at the beginning :—that *ambition* was his *ruling passion !* He has left the hard-earned masses of forty year's toil and privation to support a title and incorporate his name with the aristocracy, which, in early life, he despised, while he has left a paltry thousand to his eleve—his nephew—and the most honourable, amiable, and talented of all his relations ! !

CONCLUSION.

We cannot close this article without saying a few words as to the biography and the biographer. We think Mr. B. Cooper has been rather severely handled by some of his critics. They aver that the biography is needlessly minute, and badly arranged. The work is certainly not conspicuous for the LUCIDUS ORDO ; nor is it remarkable for its concentrativeness. But it is the very nature of a biography to be *minute*. We hunt after the little sayings and doings of a great man, with much more curiosity than after the main and more public acts of his life.

"Nihil est aliud magnum quam multa minuta."

Nothing was ever more minute, and gossippy than Boswell's life of Johnson, and yet to that very quality was half its popularity owing. Some critics say that the work is badly written. We do not think so ;—and we have read every page of it. It is better written than some of the critiques on it. We do not deny that it is diffuse, and not well arranged ; but we are of opinion that the heterogeneous materials from which the narrative of the biography was constructed, would have puzzled the ablest and the most practised writer.

The introduction of the RESURRECTION-SCENES is another charge brought against the biographer by the squeamish sentimentalists of the day. But what was of vast importance to Sir Astley, and indeed to the whole of the profession, at that time, should not be passed unnoticed, now that such scenes are swept away by legal enactments.

We are of opinion, however, that, in a future edition (and many will be called for) Mr. Cooper may usefully compress the matter, making up for this compresssion, by an extension of those excellent moral and professional remarks and counsels which are scattered through the volumes as they stand.

PHARMACOLOGIA; BEING AN EXTENDED ENQUIRY INTO THE OPERATION OF MEDICINAL BODIES, UPON WHICH ARE FOUNDED THE THEORY AND ART OF PRESCRIBING. By *J. A. Paris*, M.D. Edition Ninth. London: Highley, 1843.

IF the number of editions through which a book has passed, be a fair standard whereby to judge of its merits (and certainly a strong plurality, and high desert generally go hand in hand,) the book now under consideration comes before the world with powerful recommendations. We shall present our readers with an analysis of the practical parts of it, interspersing our own remarks as we go along. Before, however, we enter on the more immediate subject of which the work treats, we cannot forbear expressing our decided and cordial concurrence in the truth and justice of certain remarks made by the author in the preface to his work. He states, and we think with much propriety, that although the medical public were already in possession of several pharmaceutical compendiums drawn up for the purpose of directing the practice of a junior, and of relieving the occasional embarrassments of the more experienced practitioner, and had books on materia medica, pharmaceutic chemistry, &c. sufficiently descriptive of the natural history, sensible qualities, chemical constitution and medicinal virtues of the several articles used in medicine, as also explaining the various pharmaceutical operations by which such bodies might be rendered available as remedies, still there was something yet wanted; no directions were given to teach the student, when the medicines were put into his hands, how he should mix, combine, and order their application in the form of extemporaneous prescription. It is well known to every experienced practitioner that, amidst all the perplexities which beset the young practitioner, there is none more embarrassing than that of adapting a prescription to all the circumstances of a particular case with therapeutical propriety and chemical accuracy. For the want of such guidance he is necessarily abandoned, on commencing his career of practice, to the alternative of two great evils—a servile routine on the one hand, and a lawless empiricism on the other. In the truth and value of these observations we repeat we entirely concur. We have only to regret that our author has not, in these remarks, pointed out the sources whence the student should derive, in the first instance, this knowledge which was to enable him to prescribe with therapeutical propriety and chemical accuracy; for surely he does not mean to say that his work was to fulfil these very important and essential ends; the former, viz. the prescribing with therapeutical propriety, if we understand the Doctor aright in his use of the terms, can only be obtained from an acquaintance with pathology, that is, in plain English, with the nature, symptoms, signs and seats of disease, as well as with that very particular and important branch of the science, viz. general therapeutics, namely, the various indications of treatment, and the most judicious methods of fulfilling them; such knowledge, combined with a thorough acquaintance with the physiological and therapeutical action of medicines will secure him sufficiently against the danger of therapeutical impropriety; whilst a knowledge of chemistry in general, as well

as of the chemical habitudes and relations of the medicines employed, will keep the practitioner quite clear of the quicksands of chemical inaccuracy. These remarks we have been induced to make from our apprehending that the inexperienced student might be led to suppose that Dr. Paris intended that the study of his work was to supersede the necessity of perusing those works expressly devoted to chemistry, materia medica, and pathology. The author never meant such a thing. The object of his book is to teach the student the best method of applying the knowledge derived from the study of the above sciences, when he is called on to prescribe for the cure or alleviation of disease—and justice obliges us to say that his book will be found to effect this object most completely and satisfactorily. The author apologizes for omitting in the present edition that portion of his work which constituted the materia medica, referring the student to the excellent works of Christison and Pereira for information on that subject. In this we think Dr. Paris acted wisely.

In lieu of this part he offers the compensation of a much more extended view of that province, "which," he says, "I must continue to regard as peculiarly my own, for no author of the best repute has hitherto invaded it—the philosophy of medicinal combination." We have been so long accustomed to associate in our minds great modesty and great merit, that we very much regretted to meet such an assertion coming from Dr. Paris.

We fancy we hear some surly critic ill-naturedly exclaim "*exceptio probat regulam*," in which exclamation we however do not join. Certainly Dr. Paris must recollect that Gaubius led the way in one of those departments which constitute the subject of his (Dr. P.'s) book in his celebrated work, entitled *Ars concinnandi formulas*, from which, by the way, modern medical writers are so fond of borrowing without the least acknowledgement; whilst the department treating of the classification, and modus operandi of medicinal substances had been anticipated by the late Dr. Murray. No doubt Dr. Paris has availed himself in the most dexterous, we mean of course the most judicious, manner, of the vast improvements which have been since introduced into the various branches of medical science; but he is in error when he says that the province of pharmacology is peculiarly his own; Gaubius and Murray invaded the province and conquered it; Dr. Paris took peaceable possession of it, and has made vast improvements in it—in a legal sense, however, we must admit that it is his own, possession being, as the saying is, nine points of the law.

PART I. which contains merely the REVOLUTIONARY HISTORY of the Materia Medica, we shall pass over, as not admitting of analysis, and shall proceed at once to—

PART II. IN WHICH ARE CONSIDERED THE OPERATIONS OF MEDICINAL SUBSTANCES, AND THE CLASSIFICATIONS FOUNDED ON THEM.

"Medicines are defined to be those bodies which by due administration are capable of producing changes in the condition of the living system, whereby its morbid actions may be removed or controlled." That *medi-*

cines are for the most part but relative agents, producing their effects in reference only to the state of the living frame, is a truth which our author is very anxious to impress on the mind of the young practitioner. He concurs with Sir Gilbert Blane in believing that the virtues of medicines cannot be fairly essayed, nor beneficially ascertained, by trying their effects on sound subjects, because that particular morbid condition does not exist which they may be exclusively calculated to remove. We must say we do not go the entire length with our author; we are inclined to think that the therapeutical effects of medicines (their virtues) should be deducible from their primary or physiological effects, at least there should be some connexion between them.

The particular Organs, Fluids, and Tissues of the Body may be acted on through Four distinct Channels, or Modes of Communication.

I. BY THE ACTUAL CONTACT OF THE APPROPRIATE REMEDY.

A. Conveyed through the medium of the circulation to distant parts, *without decomposition.*

Internally.

a. Through the lacteal vessels.
b. Through the branches of the venæ portarum.
c. Through the capillaries.
d. Through the absorbents of the alimentary canal.
e. Through the absorbents of the bronchial vessels.

Externally.

f. Through the divided blood-vessels.
g. Through the lymphatics.

B. Conveyed by absorption, *with decomposition;* by which one or more of its constituents are developed, and carried into the circulation.

a. Through the same channels as in the preceding case.

II. BY AN IMPULSE CONVEYED THROUGH THE INSTRUMENTALITY OF NERVES.

a. Through the sympathy of their peripheral extremities.
b. Through the intervention of the nervous centres, and their reflex action.

III. BY THE SYMPATHETIC CONTROL EXERTED BY THE STOMACH AND ALIMENTARY CANAL ON DISTANT PARTS.

IV. BY THE OPERATION OF CONTIGUOUS SYMPATHY, OR BY THAT WHICH IS EXCITED BY THE MERE PROXIMITY OF PARTS.

On each of these several divisions the author makes several remarks.

I. A. *On Remedial Agents conveyed by Absorption* WITHOUT DECOMPOSITION.

"That certain bodies are capable of evading the assimilating functions, and of entering unchanged into the circulation is a fact, capable of physiological, chemical, and therapeutical demonstration; thus, the physiologist has proved that

a substance introduced into a closed cavity may disappear—the chemist has traced it into the blood, and detected its presence in the secretions, or tissues of the body, while the physician has recognised its specific effects upon the organs with which it has come into contact, or through which it has passed. Among the substances which so pass, are the *carbonate*, *chlorate*, *nitrate*, and *sulpho-cyanite of potass*, and the *bi-borate of soda*—these pass unchanged through the blood, and are excreted by the kidneys. *Ferro-cyanuret of potass* (prussiate of potass) has been detected in the urine by Westrumb, from two to ten minutes after it had been swallowed, as well as by several other physiologists after different intervals.

"I have myself made many experiments upon this subject, and have verified to my entire satisfaction several of those of Christison, Coindet, Tiedemann, and others."

On the subject of the absorption of substances from the surface of the body, three distinct propositions are included: 1*st. With respect to the absorbing powers of the skin from simple contact:* 2*d. From friction:* 3*d. From the removal of the cuticle.* On these several questions, we beg leave to refer to the work itself.

A most interesting question has arisen, in modern times, as to the mechanism of absorption. It is now very generally believed that there are no vessels terminating by open extremities, as Haller and others imagined; and even Bichat's idea of exhalant vessels being the open side-branches of the capillaries, has been disproved. The opinion now prevails that all animal textures are permeable to fluids, by virtue of their pores, and that absorption is effected by what Majendie calls *Imbibition;* the phenomena of which, under the terms of *Exosmose* and *Endosmose*, have been fully investigated by M. Dutrochet.

"The medicinal substance, then, having, through one or more of the channels above stated, found its way into the general current of the circulation, the next inquiry is, as to what becomes of it. Here, then, arises another question of singular interest, and of great practical importance, as being one which will not only influence our theoretical views, but which must give a scientific direction to our practice. It is evident that the substance thus introduced must either be subsequently ejected from the body, through the medium of some of its secretions or excretions—or become united to some of its textures—or combined with, or wholly decomposed by, the vital action of the blood or its vessels."

"That certain remedies should act upon particular organs," says our author, "and leave others wholly uninfluenced, is a fact which appears to me to be far less mysterious than some physiologists have supposed. The substance in question necessarily pervades the whole organization, through the medium of the circulating blood; but it will only affect such organs as possess *a peculiar susceptibility of its action.*"

The author should have seen that the "peculiar susceptibility" extricated him from no difficulty, save that of a *petitio principii*, or at least a something exceedingly like it.

Our author next considers the subject of—

1. B. *Remedial Agents conveyed into the System by Absorption,* WITH DECOMPOSITION, *by which one or more of the constituents are developed.*

In this category are included the greater number of substances that act by being absorbed; as there are comparatively few that do not undergo

some change during their transit and final exit from the body. It was a maxim of Cullen's, that with respect to vegetables, and also some animal substances, "it is often a certain portion of them only that can be subjected to our digestive organs, while the medicinal part of the same is hardly affected; and therefore it may be alleged that their operation on the interior parts is not prevented by the powers of digestion." Our author lays claim to the merit of having been the first who attempted to give to this vague proposition a more definite form, or to examine the laws by which such decompositions may be governed. Since his having done so, writers on the Materia Medica have accepted the theory, and it now very generally enters into all speculations regarding the operation of medicinal bodies.

Our author adopts the classification of Dr. Murray, with a few additions of his own.

His classification is as follows:—A. GENERAL STIMULANTS. B. CONTRA-STIMULANTS. C. LOCAL OR SPECIAL STIMULANTS. D. CHEMICAL REMEDIES. E. MECHANICAL REMEDIES. F. ALTERATIVES. Under each of these six heads he arranges several classes. The first of these heads he sub-divides into *a*. Diffusible, and *b*. Permanent. To the Diffusible belong Exhilarants, Narcotics, and Anti-spasmodics,—and to the Permanent, Stimulants, Tonics, and Astringents. The physiological correctness of this arrangement has been frequently disputed; it has been found, however, extremely difficult, nay even impossible, to substitute one wholly free from objection. We have often thought, that, if the primary effects of medicinal substances could be made the criterion of classification, much confusion might be avoided; we are well aware, however, that a serious objection could be made here also, as the primary effect itself is variable, depending, as it frequently does, on the quantity administered. The truth of the maxim, that medicines are mere relative agents, appears nowhere so striking as in the case now before us; let the system be languid and oppressed from intestinal accumulations, the operation of a purgative will, by unloading the bowels, relieve the state of languor and oppression, and so exhibit all the effects of a stimulant; let the brain or the lungs be congested, venesection will, by removing this state, arouse the powers of the system, and so act the part of a stimulant.

"The two most essential processes of animal life," says our author, "are nutrition and excretion, and these are exclusively performed by capillary vessels; suppose the balance of their circulation to be disturbed; mercury, by restoring and equalizing it, might, in certain cases, prove a true stimulant." In this small compass there is some physiology which may admit of question. In the first place, we are told that "the two most essential processes of animal life are nutrition and excretion,"—it is usually taught that nutrition and excretion are by no means processes of *animal* life, but of *vegetative* or organic life—letting that, however, pass, what means "the balance of their circulation being disturbed"?—what precise idea is to be annexed to these words? what can, properly speaking, *unequalize* the circulation? we know that the circulation may become quicker or slower, stronger or weaker, or more or less irregular, in a part, but it cannot be *unequal;* the blood must be sent *equally* to every part of the body, passing as it does from the heart through a single canal—the aorta.

Again, we read, "the nervous system may be in a condition that repels sleep; a judicious and well-directed narcotic, in as much as it affords the means of indirectly *giving power* to the body, may be correctly considered as a *stimulant*." The distinction is not clear between stimulants and tonics in this place. Stimulants give increased action; tonics give power; but, according to the author's own words, action is not power." We fully agree with the author, when, he says, "we must at once perceive how imperfect must be every classification that does not acknowledge pathology as its foundation." This is sound, orthodox doctrine.

"From the too common error of mistaking action for power, and of regarding that which is, in fact, only borrowed, for an actual increase of capital, the practitioner has often concluded, that debility and stimulants (I use the terms according to their popular acceptation) constantly stand towards each other in the relations of disease and remedy; the same false reasoning will also lead him to conclude that a debilitated patient can never bear depletion, forgetting that the weakness may be the effect of disease, the removal of which can alone restore strength. The practical applications of these views are as numerous as they are important, and we shall have frequent occasion to refer to them."

Where the debility is *real*, where it is the effect of previously impoverished diet or of long-protracted disease, accompanied by great inanition of the capillaries, then we would have a poor opinion of that man's practice who would have recourse to depletion; but when the debility is only apparent, when it is *oppression* and not debility, that really exists, such oppression being occasioned, as so frequently happens in fevers, by the congested and adynamic state of the lungs, in which the blood is but imperfectly arterialized, then the brain, being thus supplied with such deteriorated blood, becomes oppressed, as does the entire nervous system with it—here to employ stimulation would but tend to overload still further the already congested capillaries of the brain, and so to oppress the nervous system that the powers of life must of necessity ultimately decline. Here the obvious indication is to employ depletion, by which means the lungs, brain, and other organs which may be in a state of congestion become relieved of the load which oppresses them. The lungs, thus relieved, become better able to arterialize the blood: and this improved blood becomes better adapted for the restoration of the functions of the nervous system. The great point in such cases is carefully to distinguish real from apparent debility.

We now come to the interesting subject of *Narcotics*, which our author defines to be "substances which, in moderate doses, occasion a temporary increase of the actions of the nervous and vascular systems, but which is followed by a greater depression of the vital powers than is commensurate with the degree of previous excitement, and which is generally followed by sleep." When large doses are taken, the symptoms of diminished sense and motion follow so rapidly, that the previous stage of increased action is very obscure, or not at all perceptible. This two-fold effect of narcotics now seems to admit of explanation from the fact that they, or at least the principal one, *opium*, contain both stimulant and narcotic properties combined, the former depending on the presence of *narcotine*, the latter on that of *morphia*. The circumstance that the narcotic principle

is generally combined with either a stimulant or a sedative renders peculiarly necessary to distinguish it from both the one and the other of these; this fact it is which has occasioned the contradictory and unsatisfactory reports of the value of the different narcotic remedies. It is rather surprising that our author makes no allusion whatever to the co-existence of these different principles, the more so as it is on a knowledge of it that the judicious employment of them depends in the treatment of disease. Thus opium, which contains a stimulating principle combined with the narcotic, will not suit those cases of disease in which hyosciamus, which contains the narcotic combined with a sedative, would be applicable. If we want to administer a narcotic to a person who exhibits the symptoms of pyrexia, as hot skin, thirst, delirium, &c., we should prefer hyosciamus or some sedative narcotic to opium, by which no doubt the patient will be put to sleep, but sleep from which he is likely to awaken feverish and unrefreshed, whilst a sedative narcotic would have cooled and refreshed him. There is, however, something in the action of opium, which we must admit stands very much in need of elucidation.

We next come to the consideration of CONTRA-STIMULANTS, or SEDATIVES. It has been the custom to identify these and narcotics, and to place them in the one category; however, as our author well observes, whoever has carefully observed and compared the effects of these agents must withhold his assent to such an alliance. "A *sedative*, in whatever dose it may be given, is never followed by the slightest indication of excitement: it directly and *primarily* depresses the powers of life, whereas a narcotic in small doses never fails to increase the vital force." In fact, a sedative produces its effects by repressing the nervous influence, and thereby diminishing the action of the heart and other organs. Some will have it, however, that there is no such thing as a direct, primary sedative; but that the sedative effect was only the secondary result of exhaustion from stimulus. To this conclusion they are led from the state of stupor which is observed to supervene on intoxication after the use of fermented liquor; as also from opium, which is observed to be stimulant in small quantities, before enough of it is taken to produce stupor. A state of exhaustion being thus observed to follow intoxication or any other abuse of stimulus, it has been taken as a matter of course that every sedative effect must be secondary, and the consequence of previous stimulation.

Our author's observations on the physiological effects of sedatives, as well as of their application to the treatment of disease, are not so copious as he might have made them. Substances of this class, when taken in a large dose, are observed to produce great anxiety and despondency of mind, and to render the nervous system so depressed that it becomes incapable of directing the muscles—hence the giddiness and staggering so often observed after the use of cigars in excess: the retina itself is often so much effected, that the individual cannot see distinctly: we know the same effects may be produced by severe hæmorrhage. We know that coma may arise from either plethora or inanition; its treatment must evidently depend upon which of these two different and opposite states have occasioned it; if it arise from inanition, as it sometimes does in the case of children, depletion would be mischievous, and we must have recourse to stimulants; whereas, if it be occasioned by congestion, the

opposite line of practice is indicated. A knowledge that opposite states may give rise to the same symptoms is of the utmost importance in the practice of medicine.

Sedatives, contra-distinguished from stimulants, diminish the injection of the brain, at the same time repressing nervous influence; whilst stimulants, by exciting the heart's action, and also increasing the discharge of nervous influence, increase the injection of the brain; hence when stupor or delirium comes on from sedatives, inanition is the proximate cause, whilst congestion is the proximate cause when stimulants produce such symptoms.

Antispasmodics.—These, our author defines to be "substances which are supposed to possess the power of allaying the inordinate action of muscular structures." The necessity of establishing a distinct class of substances, as capable of *specifically* controlling spasmodic action, is, to say the least of it, very questionable.

Before we can determine how far we are justified in recognizing any class of bodies capable of controlling spasm, we must first know what spasm is. Spasm has been defined to be a a temporary, irregular, and involuntary action of muscles, attended with more or less pain, and followed by exhaustion. "The general cause would appear to be morbid impressions upon the nervous system, of which the following are the principal exciting causes.

1. Irritation of the nervous centres.
2. A loss of balance between the nervous and sanguineous system.
3. Irritation in the primæ viæ.
4. Cold.
5. Excessive muscular re-action excited by over extension.
6. A laborious effort to expel foreign matter."

Thus, then, it is to the cause of spasm, viz. the cause of nervous irritation, and not to the inordinate muscular action itself, that the physician is to direct his attention. Indications of a plethoric or inflammatory condition of the brain or spinal marrow are to be met by depletion; whilst symptoms indicating sanguineous inanition, as spasm may arise from those opposite states, is to be combated by the appropriate treatment. Narcotics, from their power of allaying irritation and pain, are found to be very efficacious in the treatment of spasm. Spasm, in fact, depends on a variety of causes, and in order to treat it judiciously, the cause must be first ascertained—purgation, venesection, tonic treatment, stimulation, sedatives, narcotics, will, in their turn, serve to allay it, according to the causes on which it may depend.

The influence of the mind in increasing or allaying spasm must not be left out of consideration in the treatment of this affection. There is nothing more likely to produce spasm, than an excessive degree of sedative action—thus excessive hæmorrhage, the action of lead, sour fruit, &c., are frequently followed by spasm. This circumstance will point out the indispensable necessity of investigating the cause, and absurdity of prescribing for mere symptoms—sedatives, narcotics, stimulants, &c., may evidently be indicated according to the cause.

Tonics.—We now come to *Tonics*, which the author defines to be "substances, whose continued administration gives strength and vigour to the body, without producing sudden excitement, or subsequent depression."

Of course this definition is a make-shift—it does not contain in it that great essential of a good definition, namely, adequacy—but to say the truth, it is not so much the author as the nature of his subject we have to blame.

"When the vital movements have been accelerated by a stimulant beyond a certain point, the consequence will be a corresponding collapse, as already explained, and an interval must elapse before the exhaustion can be supplied, and the natural balance re-established through the agency of the *vital stimuli*; not so, however, with Tonics, for as they act slowly, and yet progressively, time is allowed for the full operation of the vital stimuli to supply an influx of power which shall, at least, equal the demand for it, and consequently no collapse can take place: but more than this is effected; for, since the re-animating or restorative functions will necessarily partake of the general excitement, they will be urged with increasing activity, and thus, as it were, by an ascending scale, will the energies of every part be gradually and permanently increased, and the general standard of strength raised. To ensure, however, this desirable result, we must be careful so to regulate the application of the vital stimuli, by a judicious system of *medical training*, as shall insure the full benefit of their revivifying influence. Such is the theory by which I propose to explain the operation of tonics, and the phenomena will be found to correspond with it; thus to the above conditions there must evidently be a limit; when the powers of the system have been urged to a certain amount, or as far as may be consistent with its well-being, the tonics assume the character of an excitant; the vital stimuli are no longer adequate to the demand made upon them, and indications of collapse present themselves."

This is rather metaphysical; and will, perhaps, scarcely suit the tastes of the plain matter-of-fact kind of folks now going. With this portion of the profession at the present day tonics are substances, which are neither stimulant nor sedative; they neither call forth actions, like the former, nor do they repress them, like the latter; their action is directed to the nervous system which they enable to generate the nervous influence, by which the entire system is invigorated. Tonics give strength, stimulants call it forth. There are occasions, no doubt, where stimulants produce tonic effects, viz. when, by stimulating the digestive organs, they enable them to perform their functions more vigorously; the new nourishment thus taken into the system, acts upon and strengthens the nerves as well as the other parts; but this does not prove that tonics are stimulants; we know there may be occasions where the employment of a purgative may be followed by tonic effects. We see sometimes the employment of a tonic followed by an increase in the strength and quickness of the pulse, with headache, &c., and this is set down as the effect of a stimulating property of the tonic; this, however, is the result of morbid sensibility of the stomach, occasioned by the tonic disagreeing with it, and not of any stimulant power inherent in the medicine. There is no class of medicines which go farther to prove the principle that medicines are relative agents, than tonics—venesection—emetics—purgatives—may prove tonic, according to the state of the system.

The therapeutical use of tonics, in the treatment of chronic inflammation, has not been adverted to by our author, though that is an extremely important part of their use in the practice of medicine; he has not touched upon the matter. The efficacy of tonics, however, in the treatment of chronic inflammations is undoubted. Bark, iron, mercury, nitrate of silver, are, all of them, found serviceable in the removal of chronic inflammations; an effect which they seem to produce by their power of giving healthy tone to the capillary vessels of the affected part, when conveyed to them through the circulation—the efficacy of bark in the treatment of erysipelatous inflammation, when the acute stage has passed by, is well known—the beneficial effects of mercury in effecting the resolution of chronic inflammations, is also universally recognised. Even in acute inflammation, when the acute stage has been subdued, it may happen that the powers of the system are so depressed, that the patient appears likely to sink: in such a case, the exhibition of tonics becomes of the utmost importance. Rheumatic inflammation in the fibrous and other tissues, the capillaries of which are very minute, are most effectually treated by mercury, iodine, arsenic, antimony, &c., introduced into the capillaries through the medium of the circulation. Analogy would incline us to consider that tonics are indebted for their efficacy in relieving inflammation to their astringency, that is, we consider them to produce an astringent effect on the relaxed capillaries of the affected part.

We now come to a class of medicines very near akin to *Tonics*, namely *Astringents*, which our author defines to be "substances which, when applied to the living body, corrugate and condense its fibres; and at the same time exert a tonic influence through the medium of its living principle."

From this definition it would appear, that very little difference exists between astringents and tonics; in fact, none whatever, if we admit that tonics produce their effects by constringing the capillary vessels.

Astringency is readily recognised by the organs of taste; the papillæ of the tongue become corrugated, and a sensation of roughness is communicated to the taste. Astringent substances are found in the mineral and vegetable kingdoms—thus, the mineral acids are found to be astringents, many of the metallic salts, also, especially those of iron, zinc, copper, and lead; some of the earths, also, combined with acids, as alum. The vegetable kingdom affords the greatest number of astringents; this principle is found to depend on a peculiar proximate principle called *Tannin*, or *Tannic Acid*, characterised by its forming with animal gelatine an insoluble compound, (*Leather*,) and with the salts of the peroxide of iron precipitates of a deep blue colour. With this acid there is another acid found almost universally associated, viz. *Gallic Acid*, which also precipitates the peroxide of iron, but not gelatine; this acid also possesses astringency. It has been recently ascertained that tannic acid is readily convertible into gallic acid by the absorption of oxigen. Some even maintain that, whatever gallic acid is obtained from galls is formed by the action of air on their annic acid.

The *modus operandi* of vegetable astringents, has been explained by some on the principle of their action in tanning. May we not account for their effects on morbidly secreting surfaces in the same way as we explained the

effects of tonics; viz. by their constringing the extreme vessels of the relaxed parts? Some of them may produce their effects by acting as sedatives, as *lead*, cold. Their power of restraining hæmorrhage, may be attributed to their influence on the stomach and intestines being extended by sympathy to the more remote capillaries. We know the effect of chewing a mouthful of coarse common salt in the mouth, in arresting hæmoptysis; this will render it easy to conceive the possibility of such a sympathy. The efficacy of astringents is much more palpable, when they are applied locally: thus we see that astringent lotions act like charms in that relaxed state of the capillaries occurring after inflammation of the mucous membrane of the eye; and, after a gorged state of the capillaries of the alimentary canal from any cause, there can be little doubt that a passive state of dilatation may continue, after the cause of irritation has been removed, and that, under such circumstances, the use of an astringent medicine may force the relaxed and dilated vessels to resume their natural diameter. In this way the benefit derived from the preparations of steel in certain chronic derangements of the alimentary canal has been accounted for.

When the use of astringents seems to be indicated, it becomes necessary carefully to consider the cause of the morbidly excessive discharge, as such discharge may depend on diametrically opposite states of the system—we know hæmorrhage may be accompanied by plethora, or by real actual debility accompanied by inanition, and that the astringent to be applied will be toto cælo different—whilst the lancet and other depletory measures are to be employed in the former case, they are totally contra-indicated in the latter. When the discharge depends on irritability, opium will prove the the best astringent, or the salts of lead may be employed; in cases of diarrhœa, depending on the flow of acrid fluids into the intestines, by which their peristaltic action is increased, we may employ an astringent, properly so called, which will repress this discharge immediately and directly; or we may employ opium, which, though it may not arrest the discharge, may render the mucous surface insensible to its acridity; or we may, without either repressing the discharge or diminishing the sensibility of the mucous surface, obtund the acrimony of the discharge by giving an absorbent, such as magnesia.

It is in cases of hæmorrhages that the use of astringents is most important. *Internal* bleeding is now known, in almost every case, to depend on a relaxed state of the minute capillaries, which allows the blood to escape by a kind of exudation, no rupture of vessels whatever being present; and as this state may accompany congestion or relaxation, the hæmorrhage may be *active* or *passive* — in the former case astringents would be not only useless but injurious—hence the obvious necessity of carefully investigating the conditions of the system on which the hæmorrhage may depend.

[*To be concluded in our next.*]

Beitrage zur Physiologischen und Pathologischen Chemie und Mikroskopie, in ihrer Anwendung auf die praktische Medizin unter Mitwirkung, &c. Herausgegeben von Dr. *F. Simon*. Band 1. Lieferung 1. Bogen 1—9. Berlin, 1843.

This is a new periodical, to be devoted exclusively to Chemistry and Microscopy, in their applications to Physiology and Pathology. The Editor is already favourably known to the public by his work on Medical Chemistry, as also by numerous contributions to pathological chemistry. It is our intention to extract from his Journal whatever may appear to us to possess sufficient interest for British readers. The introductory article, the professed object of which is to show *what Chemistry has done for Practical* Medicine, we have condensed on the present occasion. It contains the researches of the most eminent chemists into the composition of the principal fluids of the body, and the various changes and modifications produced in them by disease, and shows how far such modifications may be rendered available in practical medicine in establishing the Diagnosis, Prognosis, and Treatment of Disease.

THE BLOOD.

The physical characters of the blood are known to us ever since Leuenhoek's time; its chemical composition was not investigated till a later period. Dumas and Prevost made the first accurate chemical inquiries, especially into the constitution of the blood. Lecanu succeeded in isolating the colouring matter of the blood first in combination with protein, and afterwards perfectly. Denis instituted numerous experiments on the chemical constitution of the blood, more especially with respect to the relative proportions in which the corpuscles of the blood exist therein, as compared with the fibrine, albumen, the salts, and the fat. Müller has shewn that the fibrine, albumen and globuline contained in the blood, consist chiefly of protein, and accordingly must be considered as slight modifications of one and the same organic substance; more recently still, Andral, Gavarret, and Simon have studied the different constitution of the blood in diseases; these chemical inquiries, combined with a correct appreciation of the physical state of the blood under various circumstances, have become important for diagnosis, and even for prognosis and treatment. Already the old physicians know how to deduce from the coagulation of the blood, from the quality of the coagulum and of the serum, conclusions respecting the process of disease, which they attained through experience, and the correctness of which was confirmed by continued attentive observations; the latest inquiries have taught us to become acquainted with those qualitative changes, and have shewn their connexion with the different chemical conditions of the blood, and this knowledge of

the different chemical conditions of the blood has yielded the most important contributions to semeiology through the medium of this fluid.

From *the manner in which the coagulation of the blood takes place*, when it is slow, but yet complete, in which case the blood has a higher temperature than in the healthy state, we may infer the existence of a phlogistic state; from an imperfect coagulation, when it does not amount to the formation of a perfect coagulum, but at most to the separation of gelatinous flocculi, a deficiency in fibrine is to be inferred. This then again indicates a high degree of debility and a depression of the vitality of the blood; this state of the blood is characterized as dissolution, though in most cases those parts which in the living blood are not dissolved, but are only floating, viz. the corpuscles of the blood, are observed to be in a state of perfect integrity.

From the *quality of the coagulum* we infer, when it is large and firm, a great quantity of fibrine, and at the same time a phlogistic state, more especially if the serum is clear and of a bright yellow, and the coagulum is covered with a solid inflammatory crust. But from a large solid coagulum we are not warranted in inferring a large quantity of blood-corpuscles, as in the generality of cases a diminution of the blood-corpuscles goes hand-in-hand with the increase of fibrine; accordingly a large solid body of blood, exclusive of the blood-corpuscles, must include a no inconsiderable quantity of blood-serum, for then the inflammatory crust itself is but a blood-serum inclosed in coagulated fibrine. A small solid coagulum indicates deficiency in the blood-corpuscles, there existing at the same time diminution, or at all events no increase of the fibrine, a state which is observed in chlorosis. A soft, dissolved, bilious-like coagulum indicates great deficiency in fibrine, as observed when the vital powers are depressed, as, for instance, in the far advanced stage of typhus.

When the serum is very dark-coloured, we may infer that the red-colour of the blood is dissolved, or that the colouring matter of the bile is present; the former is ordinarily the case, when the blood contains an excess of water, or an excess or deficiency in the salts: in such cases also the quantity of the fibrine is extraordinarily diminished, and it belongs only to an imperfect formation of the coagulum; such a quality of the blood is observed in hydraemia, scurvy, and some species of bad typhus; the serum may be coloured blood-red by the colouring matter of the bile, and then, when decomposed with nitric acid, it yields the known changes of colour. In cases where the colouring matter of the bile is present in the serum, a large firm coagulum may form with an intensely coloured inflammatory crust, which indicates an inflammatory state, or the blood may coagulate only imperfectly, as in typhus icterodes. The presence of the colouring matter always indicates that the hepatic system sympathises. A whitish, turbid, milk-like serum is observed, when fat, pus, or fibrine, precipitated in very small kernels, visible only with the microscope, is made to float therein. The microscope shews which of these substances is present in the serum; if it be fat, the fat globules are seen; if pus, the pus-corpuscles; if fibrine, numberless small globules or points, which do not disappear on the addition of æther, nor on the addition of acetic acid, are deposited from the serum when diluted with water, and may be washed away with water. The presence of fat in the serum in-

dicates not infrequently an organic change in the chylopoietic system, chiefly in the liver, as scirrhus of the liver. Pus in the serum indicates suppuration in the blood-vessels, phlebitis, or the presence of pus in the large organs, which assist in the circulation or preparation of the blood; at the very most minutely divided fibrine floating in the serum has been observed, and that but seldom. I found it but once in the blood of a man who laboured under Bright's disease of the kidney.

It is also of importance to take into our observations the form of the blood-corpuscles also; to be sure this seems to be essentially changed in but very few cases; several observers however agree in this, that in cases of severe typhus, where ammonia forms in the blood, the blood-corpuscles become changed, so that their edges appear torn and tattered.

The chemical investigation of the blood affords the most important points for establishing the diagnosis; it is evident that the correct appreciation of the signs, hitherto adduced from the physical qualities of the blood, was first obtained by physical examination; it gives us the only true solution regarding the quality and the change in the composition of this fluid; it has taught us that in inflammations the fibrine and fat become increased, and the blood-corpuscles diminished; that in the chlorosis the blood-corpuscles are sometimes extraordinarily diminished, but the fibrine usually appears in its normal quantity; that in typhus the imperfect coagulation of the blood is to be ascribed to a deficiency in fibrine matter; that in sea-scurvy an excess of salts is present; the chemical examination it is, which brings those physical signs from the blood already known to the ancients and correctly appreciated in reference to the mode of treatment into a peculiarly clear light. Experience and chemical examination have taught us, that in case of an increased re-action between the blood and oxygen the fibrine becomes increased and the blood corpuscles diminished, and that in case of impeded re-action the quantity of fibrine becomes diminished. The results of experience also seem to lead us to think that a blood rich in fibrine increases the impulse of the heart, whereby the circulation becomes accelerated; when by abstracting blood the absolute quantity of fibrine is diminished, it appears that by this process also an impression is made on the heart's impulse, the consequence of which again is a smaller fibrination of the blood. Excessive venæsections may accordingly render the blood poor in fibrine, and thereby so change the re-action of the vascular system, that it becomes what is commonly designated a nervous re-action. From the blood and the re-action accordingly the physician must derive his indication, whether the venæsection is to be continued or not; if diminished re-action between the blood and oxygen diminishes the quantity of fibrine, it gives reason to think, that when phlogistic states exist under certain conditions, a re-action and a quality of blood may be found, which is more indicative of a nervous than of an inflammatory state. In case of inflammation of the respiratory organs, or of those inflammations which take on an extremely rapid and intense course, the physician sometimes finds a small oppressed pulse, which by itself alone, exclusive of the connexion with the other phenomena, would by no means call for venæsection; the blood drawn, forms a soft, diffluent coagulum sometimes covered with a bilious-looking film, and it is only when, after a correct appreciation of the morbid process, the venæsections

have been repeated, that the character of the inflammation shews itself in a manner not to be mistaken, as well in the quality of the blood as in the re-action. There is not a doubt that here, by excessive congestion in the lungs, or in the entire capillary system, the reciprocal action between oxygen and the blood was diminished, and it was only after the circulation again became free by the necessary abstraction of blood, those peculiar changes produced by inflammation showed themselves as well in the blood as in the re-action. With the other phenomena, which enable the physician to recognise chlorosis in the diseased body, it is the changed composition of the blood, ascertained by chemical examination, which is expressed in the great diminution of the blood-corpuscles; this examination will also teach him how far the preparations of iron must be continued, so that by the action of these remedies the composition of the blood may be again brought back to the normal state.

THE URINE.

From the physical and chemical state of the urine the attentive observing physician might obtain a great quantity of information for ascertaining and establishing a diagnosis; much of what might be said here is already known, and I shall touch on these points very superficially, much more however might prove to the reader not at all uninteresting.

The old physicians considered the examination of the urine as an important point for judging of diseases and of their probable course, and as we have already remarked, they made up for their deficiency in chemical knowledge by sharp and close observation: the earliest chemical examinations of the urine occurred in one of the earliest epochs of organic chemistry. Among the earlier investigators who paid attention to the urine, though very partially, I may mention Brandt, Kunkel, Boyle, Bellini; Boerhaave, however, attempted an analysis of the urine which, considering the time, was extremely good. Scheele's discovery of uric acid, and Cruikshank's of urea, contributed essentially to a more correct knowledge of this secretion. The latter surgeon had already examined the urine in several diseases, especially in diabetes and dropsies. At the commencement of the present century it was chiefly Berzelius and Prout who made the urine the subject of extended inquiries; Berzelius demonstrated the existence of lactic acid, which by the earlier chemists had been considered to be acetic acid; the analysis communicated by Berzelius in 1809 of the composition of the urine, has been till within the last few years the only correct examination of the same; Prout has continued his inquiries up to the latest period. Of the more recent works on the constitution of the urine, those by Lecanu are the most prominent; within the last year Becquerel, Lehmann and Simon have employed themselves with examinations of the urine in the healthy and morbid state. Several constituents of the urine, both in the state of health and disease, are very accurately known, as uric acid, urea, lactic acid, the salts and the sugar of the urine; of others probably not less important we have a very imperfect knowledge, as of extractive and colouring matters. Regarding the quantitative composition of the urine, which is rather changeable, numerous

investigations have been made by the above-named chemists. Lecanu also investigated the varieties which may be shewn in healthy urine, according to age and sex.

The quantity of urine passed in the 24 hours, and its colour, are frequently of importance. A diminished quantity of the urine passed in 24 hours is under circumstances a sign particularly of acute diseases; an excessive increase of the urine, if permanent, is oftentimes indicative of serious diseases. A dark-coloured, flaming or fiery red urine commonly indicates an inflammatory affection; a dark brown red is generally observed in typhus. But the urine may also be coloured blood-red or brown-red by bile-pigment, which is easily detected by its re-action with nitric acid; the latter constantly indicates an affection of the liver; a blood-red urine commonly contains blood; there is then for the most part found in it a sediment of blood-corpuscles, which are recognized with the microscopie; but should a little blood be contained in the urine and this in a state of solution, it may be discovered by adding nitric acid, which occasions a precipitation of coagulated albumen coloured red by hæmatine. This bloody urine indicates a bleeding in the kidneys, bladder, urethra, or, in the case of women, of the uterus. Blood flowing from the urethra comes in drops. If the blood is discharged in masses after clear urine, it comes from the bladder, and in that case it often stops up the passage from the bladder by coagulation; if the blood is distributed through the urine, partly dissolved, and not in very large quantity, it comes from the kidneys; if it be dark, and mixed with mucus and pus, it owes its origin to an ulcer. The presence of stone-colic shews that the blood has been poured out during the descent of a renal calculus.

Blue urine has been observed, though not frequently; in the majority of cases it probably owes its origin to the use of certain medicines; black urine has likewise been observed; the connexion, however, is not yet known between the colouring matter and the morbid process; greenish urine indicates, according to Prout, an oxalic acid diathesis; sediments of oxalate of lime form, or mulberry calculi pass away; a urine, which is pale-coloured, and has a bias to green, frequently indicates the presence of albumen, which is readily detected by heating to boiling or by nitric acid. In this case the urine is not perfectly clear, but slightly opalescent; its quantity may be increased, diminished, or natural. The oxalic-acid diathesis of the urine indicates, according to Prout, functional disturbances of the chylopoietic system: albuminuria ordinarily indicates dropsy and an affection of the kidneys. The re-action of the urine is important for the physician. Natural urine, it is well known, has an acid re-action: the quantity of free acids in the urine and the intensity of the re-action may increase to an extraordinary degree in diseases, more particularly in rheumatism, gout, in disturbances of the digestive organs, and in certain stages of typhus; to judge correctly of the intensity of the acid re-action, reference must be had to the quantity of the urine; the greater or less acid re-action is known by the effect of the urine on litmus paper of a weak blue colour, which becomes coloured so much the more rapidly and the more deeply reddened, the greater the acid contents of the urine are. Urine with a neutral re-action commonly forms the transition from the acid to the alkaline re-action, and vice versâ. The alkaline

re-action of the urine is of great importance to the physician; it commonly depends on carbonate of ammonia, the presence of which is recognized by the odour, and the white cloud, which a glass-rod developes when moistened with an acid salt and brought near to it. The urine also may have an alkaline re-action through its containing carbonate of soda, which salt finds its way into the urine by the long-continued use of carbonate or bicarbonate of soda with vegetable acids. The urine alkaline by carbonate of ammonia is but seldom evacuated in this state from the bladder; during its discharge it is commonly neutral, and becomes alkaline only in a shorter or longer time after; badly-cleaned vessels may moreover contribute much to this, a circumstance which ought to be taken into account. Urine which already on voiding it has an ammoniacal re-action, and has also a very bad smell, indicates always a serious affection of the nervous system, and especially of the spinal chord. In certain unfavourable stages of tabes dorsalis, phthisis of the spinal chord, paralysis of the lower extremities and of the bladder, the voiding ammoniacal urine is ever an unfavourable sign; in other affections of the nervous system also, as in typhus, ammoniacal urine is observed, which however assumes this re-action in the majority of cases not till after it has stood for some time. In typhus the re-action of the urine may be of importance for the prognosis when the urine, after it was observed to have an acid re-action through one, two, or three periods of seven days, is finally found to be neutral, and then to have an ammoniacal odour and re-action; when this re-action lasts for several days, probably during one entire period of seven days, and then again passes into the acid, this seems in most cases to indicate a favourable termination to the disease. The urine having an ammoniacal re-action in typhus has usually a dirty, turbid yellow-brown or red-brown appearance, and forms sediments which disappear in a great measure on the addition of free acids; also in catarrhus vesicæ, or in phthisis vesicæ the urine becomes ammoniacal in a very short time after being voided; the large quantity of vesical mucus or pus indicates this affection; finally, the formation of urinary concretions, consisting of earthy phosphates, is in part occasioned by the neutral or alkaline re-action of the urine; the urine voided in this urinary affection, is not so dark as the urine in typhus, and commonly forms sediments of phosphate of lime, and of ammonio-magnesian phosphate. If the vesical calculus exercise an irritating influence on the parietes of the bladder, a great quantity of vesical mucus is commonly mixed with the urine.

The specific gravity of the urine, though by itself it possesses no great diagnostic value, as it depends on the variable quantity of water in the urine, may however claim the attention of the physician under certain circumstances; the clearer and the more like water the urine appears, the less is its specific gravity; the deeper and darker-coloured, the higher the specific gravity. This general law may admit an exception in one case, namely in diabetes mellitus; in this disease a urine is voided either normal or pale, seldom deeply coloured, the high specific gravity of which (1020—1060) is in contradiction to the colour; this high specific gravity imperatively requires a more strict examination of the urine. More than all other signs the correct examination of the sediments is of importance for the physician. Healthy urine forms only after long standing a light,

sinking cloud of vesical mucus; every other separation in the urine is of a pathological nature. The urinary sediment consists either of organic formations, as mucous corpuscles, purulent corpuscles, blood, &c. or of heavy, insoluble salts or acids, or lastly of an admixture of both; the microscope will throw light on this.

The sediment consists of organic formations. If the urine has not a blood-red colour, the sediment is white, gray, dirty-yellow, and with the microscope can be seen mucus, or pus-corpuscles; here the sediment is constantly mucus, if the urine contain no albumen; it is probably pus, if the sediment is deposited rapidly after the urine is voided, and the urine contains albumen. It is not necessary now to state of what importance it is to discover and appreciate mucus and pus in the urine; in catarrhus vesicæ the mucous sediment frequently assumes a very glutinous quality; this however happens only when the urine begins to become ammoniacal, which in urine containing mucus often occurs in a very short time, as we have already mentioned; the same may be said of pus, and it is good in this case to test the presence of albumen not by boiling heat, but by nitric acid. If the sediment is blood, the blood-corpuscles are then seen with the microscope; the urine standing over this is also of a blood-red colour. Of the import of blood in the urine I have no remark to make. If the urine contain albumen, and there exist at the bottom a mucous sediment, it is of great importance to examine this with the microscope. We may find therein, as I have observed, peculiar long prominences, partly filled, partly transparent, and round spheres, twice or thrice as large as mucous-corpuscles, filled with dark, granular contents, which beyond a doubt have their origin in the kidneys, and denote a morbid state of this organ. These peculiar forms I have frequently and at different times found in the urine of a person labouring under morbus Brightii.

The sediments which are not of an organic nature, may in like manner be easily recognized with the microscope and some few re-agents; they are either crystalline or amorphous, present themselves either in acid, neutral or alkaline urine, and are readily distinguished; in acid urine sediments of uric acid present themselves, urate of ammonia, urate of soda, oxalate of lime, cystin. The greatest number of sediments which present themselves in acid urine consist of urate of ammonia; less frequent are those consisting of uric acid, still rarer are those consisting of oxalate of lime, and the most uncommon of all are those consisting of cystin. Sediments consisting of earthy phosphates do not occur in urine having a strong acid re-action. Every sediment occurring in acid urine from yellow to brown, from red to purple red, appearing under the microscope as an amorphous precipitate, or as large and small globules aggregated together, which is dissolved entirely or almost entirely on warming the urine, is urate of ammonia; to this belong accordingly all the so-called critical separations in the urine; the species of separation of the urate of ammonia is very various, and it appears sometimes as mere turbidness, without forming any sediment whatever, sometimes it lies at the bottom of the vessel as coloured mucus or pus, at other times heavy, like an earthy precipitate. In the case of those diseases, which in the course of their development admit a termination by a critical separation in the urine, the kind of separation is of importance. The heavier the sediment lies at the bottom,

and the clearer the urine is that stands over it, the more decided is the crisis allowed to be; whilst the lighter the sediment floats, and the less disposition there is to a perfect deposition, the more imperfect is Nature's effort to break down the disease by a crisis. The various colourings of the sediment are characteristic for some diseases; in acute rheumatism of the joints, in intermittent fevers, the critical sediment is observed to be coloured red up to a brown red; in acute diseases of the liver the sediment is rose-red; in typhus it has a dirty-red colour; in some diseases the appearance of the sediment appears to be of no constant critical import, as, for example, in typhus.

A sediment in the acid urine, which is not dissolved on heating the urine, and which appears crystalline when observed either by the unarmed eye, or with the microscope, and is coloured yellow up to vermillion red, is uric acid. It ordinarily appears in the form of rhombic plates, and in the majority of cases mixed with urates of ammonia, where it then forms the undermost and dark-coloured layer of the sediment. That the deposit of uric acid is of critical import, is scarcely to be doubted; in gout and in cases of renal calculi, where the deposits consist of uric acid, uric acid or the discharge of gravel form the most perfect crisis; in many other diseases we still want the necessary observations concerning the critical value of uric acid secretions. The sediment of oxalate of lime presents itself more rarely than those before-mentioned; it usually forms a white precipitate; observed with the microscope, it appears in the form of small octoedra, or of little spheres arranged one by the other; it is not soluble in acetic acid, but readily in hydrochloric acid; when sulphuric acid is poured on it it disappears, and after some time long, lancet-formed plates of sulphate of lime are seen.

Respecting the diagnostic value of the oxalate of lime in the sediment sufficient observations are still wanting; it is probable that it is connected with serious disturbances in the chylopoietic system; that we should be attentive to the possible formation of stone of oxalate of lime, where the sediment shews itself frequently and permanently in the urine, is of importance; however, the physician, in order to judge of the phenomena more correctly, must also have reference to the diet, as oxalic acid may be conveyed into the body by various sorts of food.

The occurrence of cystin in the urinary sediment is very rare. It is easily recognized by its remarkable form; it forms faint yellow-coloured hexaedral plates. According to Prout, the appearance of cystin in the urine is a very unfavourable sign, it indicates the formation of cystin-calculi.

In neutral urine, or that with an alkaline re-action, besides the sediments already mentioned, precipitates of earthy phosphates present themselves; they are readily known by this; that they disappear on acidifying the urine with acetic acid or acid salts: the phosphate of magnesia, commonly combined with ammonia, is distinguished by its crystalline form; it appears in colourless prisms obliquely truncated, very frequently in the form of a roof; the calcareous phosphate appears almost always as an amorphous precipitate; as the earthy phosphates are constantly present in the normal urine, their precipitation is commonly to be looked on as a consequence of the formation of ammonia, the free acids by which

the earthy phosphates were previously dissolved, being neutralised by this alkali; in some cases, on the contrary, the appearance of earthy phosphates in the sediment is of diagnostic value. In affections of the spinal chord, the phosphate of magnesia, more especially, appears to be secreted in great quantity; in affections of the mucous membrane of the bladder, the phosphate of lime appears in large quantity; in three cases of inflammations of the respiratory organs, at the time when resolution of the disease set in, I have seen the previously acid urine become neutral, and have observed, as a precipitate, the secretion of a considerable quantity of already formed crystals of ammonio-magnesian phosphate, perceptible to the naked eye, at the same time that in two of these cases the clear urine held so large a quantity of urate of ammonia in solution, that precipitates of uric acid were instantly produced by every acid. When calculi of the bladder are present which consist of earthy phosphates, the urine frequently contains sediments of earthy phosphates, with which a greater or smaller quantity of mucus is mixed. In scarlatina the urine is observed to be turbid at the time of the desquamation, often also before the occurrence of the same on the outer cuticle; when it is observed with the microscope, an extraordinarily great quantity of the epithelium of the vesical mucous membrane is seen in it. It is, therefore, to be admitted, that the desquamation goes on also on the mucous membrane of the bladder; and if, as frequently appears to be the case, the scaling off takes place earlier on the mucous membrane of the bladder than on the external skin, one may determine the commencement of the scaling off by examining the urine.

The knowledge of the chemical composition of the urine is of very great value for diagnosis and prognosis; especially as far as concerns the presence of matters which are not found in the normal state of the urine: albumen is readily discovered in the urine by heat or by the addition of nitric acid; if the urine is acid, heat is preferred; if alkaline, nitric acid. The presence of albumen in the urine is always of great import, and the correct estimation of the same as a means of diagnosis not altogether easy: cases are known in which albumen was observed in the urine of healthy individuals, or set in in consequence of disturbance occurring in the digestive organs; in the great majority of cases albuminuria is the attendant of dropsical phenomena, or the forerunner of them; the urine is then commonly clear, evinces a tendency to green, and contains much albumen; but there are cases of dropsy known, which set altogether without albuminuria. That the presence of albumen in the urine does not infer the presence of Bright's degeneration of the kidneys, has been sufficiently proved; where degeneration of these organs is suspected, great attention must be directed to the mucous sediment of the urine. In violent inflammations, as well as in typhus, small quantities of albumen are sometimes found in the urine; the urine is then generally very dark, and has an acid re-action; according to Becquerel, this appearance of albumen in cases of inflammation appears to be connected with a congestive state of the kidney, and as this, unless the disease is itself an inflammation of the kidneys, seems to occur only in very violent and intense inflammations, the appearance of albumen in the urine accompanying inflammation might be a sign for the intensity of the inflammation. In con-

sequence of inflammatory exanthems, especially in the desquamatory stage of scarlatina, albumen sometimes is observed to exist in the dark-coloured urine, and sometimes, though more seldom, blood. It is, therefore, a matter of importance for the physician carefully to examine the case, as this heterogeneous mixture is not infrequently the forerunner of dropsy; however, dropsy has been observed after scarlatina without albumen in the urine, and albumen in the urine without dropsy following thereon. At the commencement of diabetes mellitus, albuminuria is no rare phenomenon, and of great importance to the physician. The occurrence of albumen in this case is not constant, but alternating, it appears, before a trace of sugar can be observed, and when the sugar begins to form, it sometimes ceases again, and passing off, it gives way to the albuminuria.

To demonstrate the presence of sugar in the urine is the principal means of satisfying oneself of the existence of diabetes mellitus. If the quantity of sugar is considerable, it is easily discovered in the alcoholic extract of the urine after evaporation; if only traces of sugar are present, the sulphate of copper is used to demonstrate its presence, as we shall see at another time.

Gallon pigment in the urine is constantly a sign of the liver being affected; we have already stated that this can be discovered by the addition of nitric acid; but to infer the presence of gall pigment from the colour of the urine is sometimes fallacious.

In some diseases fat is found in the urine; this partly shows itself to the naked eye as drops of fat, partly it is suspended in the urine in great quantity, so that the latter has a milky appearance; in this latter case albumen also is constantly present, and sometimes fibrine; here too the microscope is sufficient to convince ourselves of the presence of fat. The appearance of the chyle-urine, as Prout calls it, might lead one to suspect the presence of milk; but milk has been exceedingly seldom observed in the urine as a metastatical secretion separation; and it even seems that the majority of the cases where milk-urine has been spoken of, was only chylous urine; by dropping in dilute acetic acid, or hydrochloric acid, one might in an instant satisfy himself whether casein or albumen, whether milk or albumen and fat imparted the white colour to the urine, it being known that casein is thrown down by milk and acetic acid. Among us the so-called chylous urine is a rarity: in southern countries, on the contrary, as the West Indies, it frequently makes its appearance. The urine is sometimes opalescent, sometimes milk-white; after it is voided, it is coagulated in a longer or shorter time, and presents a white tremulous mass resembling bile; fibrine is sometimes present only in very small quantity, or is altogether absent. Prout refers the seat of this disease to the organs of assimilation; however, regarding this point, we know but little that is positive. Drops of fat in the urine with albumen or only small traces of albumen occur in rapidly consuming diseases, as for instance in phthisis; they are always an unfavourable sign. However, on the occurrence of fat in the urine, persons should be particularly cautious against deception, as some fat might easily come into the vessel from without; sometimes there appears on the surface of the urine a film with ever varying colours, which may be taken for a fatty film, but which, on a strict examination with the micros-

cope, seems to be an amorphous matter, (commonly phosphate of lime) or consists of crystals (triple magnesian phosphate.)

The chemical and physical examination of mucus and pus is of great importance for establishing the diagnosis. The better and more satisfactory works on this subject have been published only in recent times; to these more especially belong those of Vogel, Hähule, Gruley, Jüterbock, Valentin, Woot, &c. The subject matter of them is to know, whether in the organ wherein the secretion of mucus is going on, suppuration is also taking place. The inquiries on this subject are among the most difficult; especially if it be taken into account, that mucous membranes when irritated pour out a secretion of a changeable quality, which in its appearance approximates very closely to pus. The varieties of pus and mucus lie not in the corpuscles, but in the fluid, dissolved parts; in the mucous liquid the mucous matter predominates, which is coagulated by water and acetic acid. Albumen is either not at all contained in it, or only in extremely small quantity; but if the mucus is secreted by constantly irritated mucous membranes, the albumen is augmented in the liquid, and the mucous matter is diminished. In the purulent liquid albumen and fat are predominant, and the mucous matter is only present in mere traces. From these marks the various habitudes of mucus and pus are derived. Mucus, as soon as it reaches the water, becomes invested with a covering of mucous matter; the same thing happens, when it is brought into dilute acetic acid, whereby it is immediately coagulated into a tolerably consistent jelly; if mucus be extended on a glass-plate, and then moistened with water, the instantaneous coagulation may then be observed with the naked eye, as well as with the microscope. This covering of coagulated mucous matter prevents the solution of the mucous balls in the water, and if air bubbles are contained therein, causes them to swim on the water. The pus is dissolved instantaneously in the water; its insoluble part sinks to the bottom, and forms there a stratum of a granular, purulent appearance; its soluble part is taken up by the water, and causes this to have a strong re-action in albumen. Those sputa in which globular, slippery mucous balls, not dissolved, are found lying indifferently at the bottom, or even floating, are always more favourable than those, where a uniformly dissolved, purulent-looking sediment has formed at the bottom of the vessel; the sputa are so much the more suspicious, the more the watery dissolved part allows us to discover the presence of albumen by boiling or nitric acid. The varieties in the habit of mucus and purulent expectoration will be best seen by comparing the sputa of a person affected with pulmonary catarrh with those discharged in consequence of an opening of a vomica. With respect to the diagnosis of tubercular phthisis by the sputa, it is extremely difficult, and requires the greatest caution and attention; the mucous membrane of the respiratory organs is always placed in a state of irritation by the tubercular process, and in consequence of this a morbidly changed secretion is given off. The tubercles themselves either soften and suppurate, or may be expectorated while still in the crude state. In case the tubercles suppurate we always find with the rounded, tough and viscid expectorated mucus at the bottom of the vessel a purulent looking stratum, which, when observed with the microscope, consists of primary cells (mucus—or pus-corpuscles) and of a large mass of amorphous minutely

divided matters. The watery part of the sputa always exhibits a greater or less quantity of albumen. It has been thought that, from the pieces of crude, tubercular masses, which are to be found in the expectoration of phthisical patients, we can determine the presence of tubercles in the lungs with great certainty; but the appearance of crude tubercular masses in the expectorated sputa is very rare, and no doubt in the majority of cases it was something of quite a different kind, more especially pieces of macerated bread, that was taken for tubercular masses, as both, when observed with the microscope as well as with the naked eye, bear some resemblance to each other. The crude tubercular mass appears in small, cheese-like gray pieces of a certain size, and presents, when passed between glass-plates, a glanular appearance; it becomes of a yellow colour when moistened with tincture of iodine. Morsels of macerated bread, which are sometimes found inclosed in balls of mucus, are similar in their habitude; under the microscope, together with the grumous amorphous matter they exhibit sometimes amylaceous granules contained within it; when moistened with tincture of iodine, the blue colour of iodine and starch shews itself. The detection and distinction of mucus and pus in the urine is in like manner extremely difficult; from the urine recently voided the pus sinks rather quickly and forms at the bottom of the vessel a purulent-looking mixed-coloured stratum tinged with blood; the urine standing over it constantly contains albumen. The mucus in the urine is slow in sinking; allows the urine to appear for a long time turbid or separates in clouds; the clear urinary fluid contains no albumen; only when the urine, which in this case easily happens, becomes ammoniacal, the mucus assumes a gelatinous viscid quality, and sinks rapidly to the bottom, still the pus in an ammoniacal urine becomes in like manner viscid. The chemical and microscopical examination of the pus itself affords some points for diagnosis; the pus from arthritic ulcers contains frequently uric acid or urate of soda, which is discovered either in the microscopical examination by the rhombic form of the uric acid crystals or by the pointed form of the crystals of the urate of soda, or by the purple red colour, which makes its appearance on heating the dried pus with nitric acid. The presence of uric acid in the pus warrants us in inferring with certainty the arthritic character of the ulcer. Normal pus has the consistence of a thick liniment; a yellowish colour, alkaline re-action, a not disagreeable, somewhat sweetish odour, and after a longer time it does not suffer its pus-corpuscles to fall. If the pus is thinnish or watery, it is not of good quality, being just as scrophulous pus. A dirty green or brown colour also indicates a bad quality of pus; to this belongs the reddish or chocolate-brown, even the darkish colour of the pus from the bones, and of the ichorous pus, of malignant pus, of carcinomatous or medullary fungoid ulcers, or of greenish syphilitic ulcers; to this latter a more or less strong acid re-action is peculiar; the odour in particular indicates the bad quality of the pus. In the malignant pus are found on a microscopical examination the pus-corpuscles partly irregular, knobby, partly destroyed, and floating as small amorphous particles or points. In the pus from the bones we sometimes find fragments of the destroyed substance of the bone, which may often be recognised by the naked eye.

The signs which may be obtained from the chemical examination of the

urine for the establishing of the diagnosis and prognosis are, as it appears, of subordinate value. On account of the difficulty of collecting a large quantity of perspiration in diseases, our investigations are still very deficient. The mere assertions which we possess on the subject still require confirmation by repeated observations. The normal perspiration has constantly an acid re-action; but this free acid increases to an extraordinary degree in some diseases, as for instance, in rheumatism and gout. In these diseases it is found that the perspiration of the forehead, breast, and extremities intensely reddens litmus-paper in a rapid and extraordinary manner. According to Berend, in putrid and typhus fever the perspiration not only should lose its acid, but even have an ammoniacal smell; according to Anselmino, in the critical sweat of a person labouring under rheumatic fever albumen should be present. Voigtel will have it that he has observed bloody sweat, and according to others this same thing is observed in putrid fever and typhus icterodes;—that the sweat of patients labouring under calculus, as also of gouty persons, contains uric acid and urate of soda, whereby, after the evaporation of the water, the body becomes covered over with a fine crystalline coating, has been frequently proved. In the sweat of icteric patients, as also of those labouring under the febris putrida biliosa, the colouring matter of the bile has been sometimes found. The red colouring matter, which imparts its colour to the lateritious sediment, has been found by Landerer in the sweat of the axillary glands of a fever patient. Blue sweat has been observed several times. In the colliquative sweats of hectic patients fat also has been found. All these signs are unsatisfactory; they do not appear constant in the various diseases, and for that reason possess far less importance than those derived from the blood or urine. The odour also of the perspiration is of particular importance. It is well known, that many medical men, on entering the sick-chamber, nay, even the sick-house, can infer the disease from the particular scent. The smell of the sweat can be the subject of chemical inquiry in but few cases; one may no doubt infer the presence of acetic acid in perspiration emitting an acid odour, and that of ammonia in sweat with an ammoniacal odour; but in most other cases the chemical examination is unattended with success; in like manner, the physician who possesses quickness of sense for distinguishing various odours, and who has exercised this sense by several years' experience, can be assisted through the sense of smell with tolerable certainty. The sweat of rheumatic and gouty persons has an acid odour; the sweat of putrid-fever patients and of scorbutic patients should have a putrid odour, that of syphilitic patients a sweetish one, that of itchy patients a mouldy smell, that of jaundic patients a musk-like smell, that of scrophulous patients the smell of sour dough, that of ague patients the smell of fresh-baked brown-bread.

The chemical and microscopical examination of the intestinal excretions is sometimes useful for the diagnosis. In disease, the fæcal matters deviate considerably from the normal state, as well in reference to their consistence as also to their mechanical and chemical composition. The deficiency of bile in the stools in cases of jaundice is sufficiently obvious. The great quantity of intestinal mucus floating in the watery dysenteric stools, which appears to the naked eye sometimes as a whey-like fluid with cheesy-flakes

mixed through it, sometimes as a purulent mucus mixed with water, sometimes red-coloured with blood, and sometimes colourless, can be discovered with certainty only by means of the microscope; sometimes we find portions of coagulated exuded lymph, in which by proper management with the microscope we can recognize the fibrous structure of the coagulated fibrinous matter. The typhous stools thus readily dividing themselves into two strata exhibit to view by means of the microscope an extraordinary quantity of prismatic crystals of the triple-magnesian phosphate, besides mucous-corpuscles, and fragments of the epithelium of the intestinal mucous membrane connected together. In like manner, in intestinal typhus, the fluid stools divide themselves into two strata, of which the inferior, purulent-looking, is recognized under the microscope as constituted of mucus and pus-corpuscles; the superior stratum, in which these same corpuscles are still suspended, and sometimes fatty globules may also be discovered, is generally distinguished by a considerable quantity of dissolved albumen. The watery stools in cholera present under the microscope, among other objects, numerous crystals of triple magnesian phosphate; the purple red colour which these stools assume, when they are mixed with nitric acid, seems characteristic.

We may now notice the peculiar qualities of the vomiting which occurs in violent inflammations of the abdominal organs, and in carcinoma of the stomach; in the former case a watery, slightly mucous, green-coloured fluid, often extremely abounding in fat, is vomited forth; the fatty contents of which may be distinguished even with the naked eye, but still better with the microscope; in the second place, the mucous chocolate-coloured discharges contain a dark-coloured amorphous matter, several large yellow-coloured cells, which are filled with a granular mass, which also contains small fatty globules mixed with them. Besides a more or less considerable quantity of fatty drops seems to be peculiar to this vomiting.

REPORT OF THE COMMISSIONERS FOR INQUIRING INTO NAVAL AND MILITARY PROMOTION AND RETIREMENT. With Appendices. Medical Department of the Army. Presented to both Houses of Parliament by Command of Her Majesty. 1840.

IN a recent number we glanced at the rise, progress, and decay of the Army Medical Board in England; and we took occasion to mention, at the same time, some of the acts of the Medical Boards in the East Indies, which, in our estimation, entitled them to a similar fate with their prototype of the mother country.

We believe it will be found with Boards, as with individuals—that they can only be seriously injured in character by their own acts of omission, or of commission; and we anticipate that we shall be admitted, by impartial persons, to have exhibited enough of the one kind, and of the other, justly to entitle both the European and the Asiatic Boards to the doom which necessarily awaited the one, and which as necessarily impends over the others.

The present admirable Director-General of the British Army Medical Department joined what was still called "the Medical Board," in 1815; and, though much the junior officer, continued the influential, and, as may well be supposed, the guiding and ruling member till 1833, when, by the natural removal of the last rags of the old system, he became the sole and responsible head of the Medical Department of the Army—a position to which his character and talents, as well as his long and tried services in the East and West Indies, in Egypt, in Walcheren, and in the Peninsula, during the campaigns of Wellington, so justly entitle him—a position in which, we will venture to say, he has not disappointed the expectations of any good man in the army, whether above or below him in station. This is great praise, we know; and we can assure the distinguished officer under consideration, as well as the public at large, that we make it as advisedly as impartially. We have no motive in stating other than what we believe, and indeed know, to be the truth.

In our former article we adduced sufficient evidence of the crying public evils attending the government of a Medical Board in London; and having done so, we shall not detain our readers with a detail of the feeble, petty bickerings—the vapid, wordy "minutes in dissent"—with which, in their last moments, and when they had lost the power of doing evil, the senior members worried and vexed the kindly-minded and excellent Chief, the Duke of York. Suffice it to say that, though they could never agree amongst themselves on any point, they nevertheless, like other old men, in other parts of the world, objected to everything, however excellent, that came from a junior, or that they could not be made to understand, or of which they could not be expected to see the end;—and thus expired, as full of age as wanting in public honour, the Army Medical Board of England.

* Duke of Wellington,
" Richmond,
Lord Minto,
" Melville,
" Howick,
" Hill,
Sir G. Cockburn,
" H. Hardinge,
" James Kempt,
" R. A. Vivian,
" Chas. Adam,
" A. Dickson.

The Report of the Commissioners* occupies but four pages of large print, and need not detain us long.

It affords, indeed, a most emphatic and melancholy instance of the cold and unpardonable indifference with which all matters connected with the medical department of the army are viewed by those even who might be expected, from previous habits of life, if not from feelings of personal gratitude, to look upon them with a friendly and fostering interest.

"We would beg to observe to your Majesty," says the report, "that the general impression produced on our minds by the examination of the evidence, both verbal and documentary, which was placed before us, was that the condition of the army medical officers was not unfavourable; that the great advantages of increased pay and increased retired allowances which were given to this class of officers by the regulations of 1830, were well calculated to secure a succession of accomplished medical officers for the military service; and that but few changes in those regulations would be requisite to place that branch of the service in a satisfactory position in relation to other ranks in the army.

"According to the existing establishment of medical officers as laid down in the Warrant of 1830, there are six classes viz:—

Inspector General of Hospitals,
Deputy Inspector General of Hospitals,
Assistant Inspector of Hospitals,
Staff Surgeon,
Regimental Surgeon,
Assistant Surgeon, and the course of promotion is regulated throughout upon a principle of selection.

"The Assistant Surgeon is eligible for promotion to the rank either of staff surgeon or regimental surgeon upon vacancies in the authorised establishment, while his subsequent advancement from the rank of surgeon, must, under the warrant, be made through the commission of assistant inspector.

"The Deputy Inspector General's appointments are filled by selection from the assistant inspectors; and the deputy inspectors furnish the candidates from whom the inspectors general are taken."

The Report then goes on to state that, while in general it approves the existing regulations, they require amendment, for the purpose of rendering more clear the demarcation of the comparative ranks and respective duties of medical officers of the different grades, and also for that of diminishing the time which elapses before they can expect to receive the first step of advancement in their profession.

"The Staff Surgeons ought, we conceive, to be considered a superior appointment to that of regimental surgeon; but this superiority can hardly be said at present to exist since the assistant surgeon may now be appointed to be a staff surgeon, without having previously gone through the rank of regimental surgeon, while the staff surgeon, who throughout the war was accustomed equally with the physician, whose place is now filled by the assistant inspector of hospitals, to look forward to the rank of deputy inspector, as a step immediately above him, is now required to pass through the rank of assistant inspector, for which the regimental surgeon is not considered less eligible than himself."

In order that each class of officer might bear the name more correctly

describing their respective situations, the Commission recommended to give to those staff assistant surgeons, whom it is proposed to place on a level with the regimental surgeon, the appellation of staff surgeon of the second class.

"The regular course of promotion in the army medical service would then be as follows:—

1. Assistant Surgeon (staff or regimental,)
2. Surgeon (regimental or staff of the second class,)
3. Staff Surgeon,
4. Deputy Inspector,
5. Inspector.

"The difference of pay between the regimental and the staff surgeon is also insufficient to counterbalance the advantage which the former derives from his mess and other regimental privileges, insomuch that it is practically found that regimental surgeons are frequently unwilling to accept the appointment of staff surgeon. It appears to us also that the nature of the duties which should properly belong to medical officers on the staff does not require that there should be so great a number of different ranks of these officers as at present exists."

For these reasons the Commissioners recommend the substitution of the scale of grades last given, in place of that first quoted, and the abolition consequently of the rank of assistant inspector, while the pay and comparative rank in the army now enjoyed by this class of officers should be conferred upon the staff surgeon; which appointment should be in future considered the intermediate grade between the regimental surgeon and the deputy inspector of hospitals. These suggestions of the Commissioners have, we believe, been adopted.

The conclusions submitted to Her Majesty's consideration are as follows:

"1. That it is not expedient to alter the existing rules with respect to the promotion of the medical officers of the army, for the purpose of facilitating promotion upon half-pay or by brevet.

"2. That to extend the means of promotion upon full-pay, it is expedient to make the following changes:

1st. To abolish the rank of assistant inspector.

2d. To give to staff-surgeons the pay and half-pay, and the comparative rank with other officers of the army, now enjoyed by assistant inspectors; making also the rank of staff surgeon the regular intermediate step from that of regimental surgeon to that of deputy inspector.

3d. To divide the assistant staff surgeons into two classes, allowing the first class the rank and pay of regimental surgeons.

"3. That it is expedient to allow medical officers retiring after twenty-five years' service, the advantage of reduced instead of retired scale of pay.

"4. That it be recommended to the military authorities of the army to consider of the means of giving to the medical staff officers attached to an army in the field, the services of a soldier servant, which shall avoid to weaken the ranks of the battalions or regiments of the army in the field.

"5. That when not employed in the field, such medical staff officers should receive, as compensation for the services of a soldier, an allowance not exceeding 1s. a day."

We now propose to analyze the evidence of Sir James M'Grigor, and of Mr. Guthrie, as given in the verbal and documentary forms to the Commissioners for inquiry into Naval and Military Promotion and Retirement.

To the question—Do you experience any difficulty in finding surgeons to serve in the army either by summoning those from half-pay, or by new appointments? the Director General answered:—"I have no difficulty in finding well-qualified gentlemen, but I have prepared a statement of the difficulties which I find in carrying on the service." The difficulties set forth are:—the slowness of promotion, and 1st. That a gentleman, who, after completing an expensive medical education is about to decide whether he will enter the medical department of the army, or pursue his profession in civil life as a physician or surgeon, on looking into the regulations, will observe that after a service of five years he may obtain a step of promotion to regimental surgeon, that in two years more he may be a staff surgeon, in three more an assistant inspector of hospitals, in two more a deputy inspector, and in three more he may obtain the rank of inspector general of hospitals, so that at 39 years of age (24 being the average at which medical officers enter the service) he may attain the highest rank in the medical department of the army." How desirable soever that, for the good of the state and of the service, these rules should be acted up to, the Director General has no difficulty in showing, statistically, how differently this inviting prospect turns out, to the disappointment and chagrin of individuals, no less than to the injury of the service, which, in consequence of the slowness of promotion amongst the assistants, "is languidly carried on."

2dly. That, though old officers may be fit for the discharge of light duty at home, and in some more of the healthy stations, yet, in such service as that of North America at present, or tropical climates, and almost all foreign stations, they are inadequate to the duties; many of them are valuable officers with much service, discharging the duties entrusted to them to the best of their ability, but they cannot be considered as effective officers.

3d. That this stagnation in advancement operates most injuriously in the cases of officers to be selected for the duties of superintendence on foreign stations, where active and able officers are required.

4th. That even the district surgeons at home, not to speak of the other staff officers on the full and half-pay, are old, with constitutions much impaired by previous long service in various climates, and are by no means fit again to embark for foreign service; and this, though they are admitted to be men of intelligence, judgment and discretion.

5th. That from a list of staff officers of the ages of 61, 64, and 65, exhibiting the actual ages of 147 staff officers on the half-pay, the Director General could not, if called on by the General Commanding in Chief, select one from the list equal to the duties of active superintendence on a foreign station. The same authority adds:—I need not to this Board dilate at any length on the important duties which devolve on superintending officers on foreign stations, and the special qualifications required of an officer for those duties; it is sufficient to say that they ought to be active as well as able officers, with experience of service.

6th. That as to the regimental surgeons in a period of peace, particularly on foreign stations, as in India and the West Indies, the only severe duty falls on the medical officer. In tropical and unhealthy climates, the duties of the medical officers are at all times heavy and unremitting, more particularly so from the repeated reduction in their number on every station;

the consequence is, that annually, numbers of them return to this country in broken-down health, and the mortality is considerable, yet it is from these classes, as before observed, that the higher ranks of the department are to be filled up.

7th. That extreme hardship exists, in the reduction in the half-pay of each class of officers, who are so placed on half-pay on any other account than by reduction of establishment, as it bears very hard on those officers who have through great zeal and exertions, particularly in unhealthy climates, been compelled, perhaps contrary to their wishes, on the proceedings of a Board appointed to inquire into their state of health, to retire. The hardship is certainly much greater to the officer who is compelled to retire on half-pay on account of broken-down health by exertions in the service, than to the officer who is temporarily placed upon half-pay on account of reduction of establishment. In truth, the restriction of the larger half-pay to those officers only who have retired on account of reduction of establishment amounts nearly to the abolition of the larger half-pay rate, for the number of such now is almost nil.

8th. That the staff assistant surgeon is often placed in great difficulty by having no servant allowed him, and it is consequently submitted that, if he be not permitted to employ a soldier as a servant, in the same manner as the regimental assistant surgeon, an allowance be granted to him in lieu of it.

9th. That hardships attend the situation of staff surgeon, such as already remarked in the report of the Commissioners.

10th. That at the late occasion of the coronation, when the navy and army obtained promotion in all the higher ranks, the medical officers of the army were passed over. They felt this the more on seeing that the civil department of the army, the commissariat, partook of this promotion, as likewise the medical officers of the navy. Had the promotion been extended to the medical officers of the army, by providing for some old officers as in the military departments, an opportunity would have offered of bringing forward some younger and active officers more equal to the duties abroad. The promotion granted had no doubt its cheering effects on the zeal and exertions of the officers of the commissariat department, and medical officers of the navy. The exclusion of the medical officers of the army was most mortifying to them, as they felt, and I believe justly, that they had not less faithfully and zealously discharged their duties than their brother officers of the other departments of the service.

11th. That the officers of the medical department should be allowed the same prospect of promotion with the other officers of the army, military and civil, as the Director General feels confident such prospects alone can keep up the efficiency of the department, particularly in foreign and unhealthy climates, where so much is expected from them, and where the efficiency of any force so much depends upon their zeal and exertions; and the Director General feels warranted in offering his humble but decided testimony to the advantage that would accrue to the service of the public, by showing to the whole department, by some general and liberal act of favour, that in a period of peace their services were estimated by the Government of not less value than in the period of war, when he, the Director General, was proud to say their services received repeatedly the most gratifying public approbation, followed by promotion.

Such are some of the difficulties experienced by Sir James M'Grigor "in carrying on the service." It will be perceived that they consist principally in acts of neglect and injustice, inflicted on those under his orders, by the government of the country. We have no right to expect that men will go eagerly to work in carrying on any service while smarting under disabilities, slights, and injuries; and, having the good of the state, of the soldier, and of the department warmly at heart, the Director General anxiously desired to secure the good will, and, by consequence, the best energies of those under his orders, by procuring for them something like an equality of honour and reward with their military brethren, to whom he felt they stood in no respect inferior, either in zeal, usefulness, or talent.

But we must now turn to Mr. Guthrie, who likewise urged the same subjects on the Commissioners, with great energy and truth. Mr. Guthrie considers:—

1st. That the refusal of promotion by brevet, on the two last occasions, is considered by the medical department an unkindness which they consider to be undeserved, and which it is believed cannot be maintained on fair investigation, with justice either to the individuals or to the public.

2d. That, though of late the promotion and allowances of the officers of the department have been settled by Sir Henry Hardinge in a fair and reasonable manner, still the questions of widows' pension and prize money are in the same unequal state as before.

3d. That, in order to understand the subject of promotion as bearing on the utility of the department, it is proper to revert to the objects for which it was formed, and to compare its present with its former state.

The objects of a medical department ought to be attained in the great advantages the sick and wounded may derive from the services of its officers, and the public from the improvements they may make in their profession; but, if we look back to former periods, it will be found that these objects were in a great measure overlooked, or made subservient to the wishes and interests of individuals.

Staff physicians and surgeons were appointed without having served a single day. They were taken from the universities or hospitals to learn their profession at the expense and great inconvenience of the unfortunate soldiers committed to their care. Placed at once, from their appointments, in situations of trust, they soon, if they remained in their service, claimed and obtained others: and thus, gentlemen who had little knowledge of the habits, of the duties of a soldier, of the composition of an army, or of anything else belonging to it, were to be the advisers of a general commanding in chief, who, in the field, had rather to teach them their duty than to receive their assistance. Sickness and loss of life, from their inexperience as well as from disease itself, soon rendered an army inefficient, and diminished its numbers more effectually than the enemy. It would be too personal to allude to gentlemen who, after a lapse of nearly half a century, receive large half-pay for little duty or service.

4th. That, whilst the army received little advantage from the services of those officers, the profession at large and the country benefited nothing. They did little or no work, made no improvement, and slighted their hard-working brethren, who had no interest to aid in their advancement. If the annals of surgery be consulted, no records will, I believe, be found of

improvements made during the campaigns in the American war, nor in those of Holland, nor in Flanders, nor even at the Helder; and the contempt of the surgeons in civil life was not unfairly bestowed on their negligent military brethren. The fault was not alone theirs, but of the higher authorities, who either denied them the encouragement, or bestowed it wantonly or carelessly on individuals who had more or less private influence.

5th. That during the Peninsular war, the hardships and sufferings of the medical officers became so great, that the government could not find men qualified to serve in the junior ranks who would go to that army. It would naturally be supposed that the course to be pursued in such emergency would have been to remove the grievances and defects complained of, or to have increased the rewards. A different plan was, however, adopted; and, as competent or commissioned officers could not be found willing to serve, it was thought right to send incompetent men as warrant officers, hired for the occasion, in order to make up in quantity for deficiency in quality. I have elsewhere pointed out the destruction of human life committed by one of these persons, under this authority; and many others did the same, without, however, any real blame attaching to them, for it was known to those who sent them that they were for the most part ignorant of the profession of physic or surgery.

6th. That there were, however, in that army, many officers who did their duty well, and who, whilst their military brethren raised its renown to the highest pitch of reputation and character army ever attained, formed for it also a surgical reputation which has not been excelled by that of any nation in Europe. They have left precepts and records which have been since followed and tried on several of the same fields in Spain, with the greatest advantage. They have the happiness of knowing that they have been the means of preventing and of alleviating much human suffering and misery, of saving great numbers of lives, and of originating one half of the improvements which took place in surgery during that eventful period.

7th. That many of these officers, who have served on full-pay nearly ever since that time, have nevertheless the misfortune to find that they alone of the whole army have latterly been overlooked and considered unworthy of any marks of approbation, and the additional mortification of seeing that this neglect has not been applied to their contemporaries in foreign armies, nor to themselves when employed in civil service, nor to their brethren in civil life.

8th. That it is considered right and proper, and worthy of a great country, as it assuredly is, to reward the exertions and energies of sailors and soldiers by promotion, by honours, and by pensions, long after the time when these exertions and these energies have been called forth; and it is honourably due in grateful and just remembrance of the service. It is only to the surgeons of the army that promotion or honours, or pensions granted in a similar manner and for similar services, are considered unnecessary, and are absolutely refused.

9th. That when worn out by long service, they are allowed to retire on a reasonable allowance, like a private soldier, but without anything, even as in his case, which can distinguish the best and the most scientific from

the worst and most negligent officers in the service. The medical officers in the army may then be said to be governed at present by the system of punishments rather than of rewards—a mode of proceeding that has always been unsatisfactory to all parties, has usually failed, and in the present day has been frequently reprobated by many enlightened men.

10th. That it is very humbly submitted that, to preserve to the service a continuation of that scientific and practical improvement which has been so remarkable since the commencement of the last war, when compared with that which preceded it, promotion in the medical department should take place in a manner similar, or nearly similar, to that in which it is granted to the army at large, by fixed and not by arbitrary rules; and that, as medical men are human beings, subjected to the same influences, feelings, and passions as other men, they should have held out to them, at all times, the same or similar inducements to good conduct, to exertion, and to emulation in their profession, as are found, or are supposed to be necessary or proper for the officers of the army at large.

Such are, almost ad verbum, the sentiments placed on record by Sir James M'Grigor and Mr. Guthrie.

When required to state any plan which may have occurred to him with a view to relieve the grievances complained of, Mr. Guthrie states that the first grievance demanding serious consideration is, the slowness of promotion. He would recommend that no assistant surgeon be allowed half-pay till he had been seven years in the service;—that after five years' service he should be allowed a gratuity of one year's pay, and of two years' pay in event of his remaining near seven years in the service: that, in event of his retiring from ill health, he should have a half-pay of four shillings; but, if retiring on reduction, or from other authorized cause, a half-pay of three shillings should be allowed after seven years' service:—that an assistant surgeon should not be allowed to serve as such beyond twelve years, or fourteen years, under any circumstances:—that after fourteen years' service he should have the unqualified right to retire permanently with the rank of unattached regimental surgeon, and the half-pay of six shillings, or seven shillings a day; because, if, between 14 and 20 years, he has not been promoted to the rank of surgeon, it must be from some defect of character, and therefore it would be advisable to part with him kindly and considerately, so as to prevent his being a clog on promotion:—that, if such an officer were allowed to remain in the service up to 30 years, his half-pay would amount to 15s. a sum much beyond what he is worth:* that in regard to regimental surgeons, who are now permitted to retire after 25 years on 11s. 6d. and after 30 years on 15s. per diem, the regulation be altered, so as to allow the latter half-pay, to 25 years' service, seeing that an officer of 30 years standing must, comparatively speaking, be an inefficient officer, averaging 54 years of age:—that by such an alteration in the rules the public would neither gain nor lose much,

* "Now the difference between 7s. and 15s. is a great deal more than he is worth, if he is not equal to all kinds of duty in every climate, and consequently the public will do well to part with him after twenty years of service at 7s. a day."

whereas the sick and wounded soldier would be much benefited :—that, in short, every practicable inducement be held forth to old officers to retire, so as to bring forward their younger and more effective brethren ;—that after 25 years he would never allow a regimental surgeon to be promoted to a staff surgeon, because whenever an officer is promoted after that time, it is generally for his own convenience, and not for the advantage of the service :—that when gentlemen have served 30 years, a great change has taken place in their professional prospects ; and being too old for exertion in civil life, they are reduced, when on half pay, to live like other officers, the best way they can, their profession being of little use to them :—that such officers, when of good character, should be Gazetted out with the rank of unattached staff surgeon :—that, as to the staff surgeon, he is the most important officer in the service, and the one in whose situation the greatest change ought to be made, because he is the officer on whom everything depends, either at a station or with a division in the field :—he should superintend and govern the regimental surgeons, look to such irregularities in the internal management of corps as might lead to disease, attend to all points as regards clothing, quarters, diet, and the general position with respect to salubrity ; and no sick man should leave the division without his permission :—that, to do all this, his rank should be above that of regimental surgeon :—that commanding officers should be in the habit of looking on the staff surgeon as a superior officer of character and reputation in his profession, the arbiter of their lives and limbs, for it is on his knowledge and decision that their lives and limbs will, in the hour of need, depend :—that he should be promoted by selection from among the regimental surgeons ; that he should not be placed on the staff till he had been eight or nine years in the service, and have gone through the respective grades of assistant surgeon and surgeon, so as to be thoroughly acquainted with the management of a regiment :—that the office of assistant inspector be abolished, giving his rank to the staff surgeon, with enhanced pay :—that formerly, when an army took the field, it was supposed it ought to have a surgeon who knew little or nothing of physic, and a physician who knew nothing of surgery ; but of late years the education of all medical officers has been made the same, and therefore, when the chief of a staff goes on service, he may say, I have three staff surgeons who are addicted to physic and three who have an inclination for surgery, therefore to the hospital that contains only sick I shall send the staff surgeon who is addicted to physic, and to the other hospital which contains wounded, the staff surgeon who likes the practice of surgery ; but as a battle is an occasional thing and sickness is always present, they should be equal on every point :—that the staff surgeon is both physician and surgeon, and should be selected from the regimental surgeons for his ability and for nothing else, which must be done by the head of the department :—that in respect to the deputy inspector of hospitals, he should be selected precisely in the same way, from the staff surgeons of about twelve years standing in the service, and for his ability and talent :—that the staff surgeon should retire after thirty years' service, in the same manner as the regimental surgeon ; but he should be Gazetted with the rank of deputy inspector general of hospitals :—that he should not again be employed as a staff surgeon, although, if not too old, he may be employed as a deputy

inspector, that office being one principally administrative and not practical:—that an officer should never be promoted by brevet and remain in the same situation he was in before:—that the pay and all other allowances of deputy inspector should be settled as equal to those of the corresponding rank of lieutenant-colonel on the permanent staff of the quarter-master general, and that their widows should also be put on a perfect equality:—that, in respect to the rank of inspector general, there is an essential grievance:—that he ought to be promoted in two ways—by merit when conspicuous or pre-eminent, and also by brevet according to his standing with lieutenant-colonels of the army, that is, he should have the rank of inspector:—that, to encourage promotion, the inspector be required to retire after four or six years—in short, that the inspectorial offices should follow the rule which governs generals, admirals, and governors in like cases:—that deputy inspectors should be promoted by brevet, without pay, according to their standing with lieutenant-colonels, so as to confer on them the much desired rank of inspector, and to which they are fairly entitled:—that on the promotion of the deputy inspectors to the rank of inspector, the vacancies made by such promotion to be filled up by selection from the staff surgeons:—that the brevet promotion of deputy inspector should be by seniority, as in the army; but promotion to those below, when they make vacancies on service, to be done by selection:—that, when made an inspector, it is not necessary to employ him as such unless well fitted for the duty, the rank being conferred in reasonable compensation for long service:—that as such officers are not likely to get any private practice, it is well to let them go into society at large with a proper addition to their rank, which costs nothing; and therefore it is that I would Gazette the staff surgeon out as deputy inspector, and the deputy as an inspector general: that the rules relating to the distribution of prize-money should be made of equal operation.

Mr. Guthrie concludes his testimony to the importance of his department and to the claims and merits of his brother officers, by an appeal to the Commission on the subject of "rewards and honours"—a subject which has not met with the attention it deserves, from its not being the particular duty of any one person to bring the services of medical officers under consideration in the proper quarter, and not, Mr. Guthrie believes, from their labours being unappreciated, or from deficiency of good feeling towards them on the part of the higher authorities, or from disinclination on the part of the Sovereign, as the fountain of all honour, to bestow such acts of grace and favour upon them.

"It is probable that the peculiarity of not bestowing rewards on military medical men, for services in the field, has arisen from their being considered and called non-combatants; but nothing can be more unreasonable than the classification of medical officers with clergymen and other civilians attached to the army, with reference to their being exempt from danger; for it is well known they are always exposed to it in the field, and many have been killed and wounded. When an army is engaged in position, surgeons may generally get under cover, but when an army advances to attack, or, when attacked, is obliged to change its position, every medical officer must move with his regiment, until he is arrested by his wounded. I am aware it may be said, that surgeons should not be so exposed, but every one who has been a regimental officer knows well how often the surgeon is called to the front, even when a single man is wounded.

The soldier expects this assistance, and medical men have never disappointed him, neither in the French nor the British armies. In a professional point of view, this close attendance has often been the means of saving life, and an examination at this, the earliest possible period, has often saved a limb. In every siege a medical officer is always sent into the gorge of the trenches, and they have at all assaults, marched with the troops. They are thus, in fact, exposed to a great part of the dangers of the field, and afterwards to those of their own profession, which crowded hospitals engender, and which have often been most fatal. In both instances they are obliged to shew a degree of moral courage and devotion which, I humbly submit, will be greatly encouraged by a little favourable consideration. In all foreign armies this consideration is given by a liberal distribution of rewards and honours which are of great importance to the individuals. In London it matters little whether a man is an esquire, a cross, or a baronet, the public take him as they want him, and for what he is worth; but in the country and abroad, where persons are more in contact, it is very different; and a great deal of attention is paid to a man who can shew, by his rewards and honours, that he has a fair pretension to merit gained on service. In the French army, I am expressly informed by the Baron Larrey, that Napoleon conferred on Desgenettes, Percy, and himself, in 1804, the gold cross, or that of an officer of the Legion of Honour; in 1807, that of commander; and, after the battle of Wagram, he bestowed upon them and several others the commandery of the Iron Crown and the rank of Baron, promoting Larrey from the surgeoncy of the Imperial Guard to the rank of Inspector General, although he was never the administrative head of the medical department of the French armies. In this way encouraging and rewarding those improvements in science, and those efforts made in the cause of humanity, which have rendered those gentlemen conspicuous throughout Europe I am not aware that the surgeons of the French army have had a greater claim on account of their services, on their sovereign or their country, than those of the British army. We consider ourselves to have been equal to them in all respects; and, if it were necessary that either class of men should shew one small step in advance of the other, I am prepared to prove that that small step—(tant soit peu, as it may be) is not against us. In order to remedy the grievance complained of, I would submit the two following modes of proceeding for consideration.

"1st. That officers who have served on full pay for 25 or 30 years, and have attained the rank of inspector general, should be permitted to submit their claims to the Commander-in-Chief, for the honour of Knighthood, and, if he should approve the appointment, to be Gazetted as at his recommendation.

"2d. That all medical officers serving in future in the field, and actually before the enemy, should share in the rewards and honours granted to the army at large, according to their respective and relative ranks, and under the same regulations.

"I would very submissively beg leave to remark, in conclusion, that in advocating the case of the older medical officers of the army, I have had also a much higher object in view, viz the relief of the sick and wounded soldier, in future wars, from those distresses, miseries, and horrors, which, during the last war, the unbounded care, the attention, and the paternal kindness of the Duke of Wellington could not entirely prevent or remove; and which can only be alleviated or removed through the medium of medical officers of good administrative knowledge, and the best professional ability.

"Such men can only be obtained by adequate remuneration, rewards, and honours."

We come now to the Rules and Regulations under which the medical officers of the army are appointed, promoted, and permitted to retire from the service; and we find that, on the appointment to office of the present

Director-General, he received from the Commander-in-Chief the following instructions :—

"All promotions and appointments in the medical department of the army, to be recommended by you to the Commander-in-Chief.

"You will in your recommendations for promotion be governed by the usual rule of seniority, as far as in your judgment circumstances will permit

"You will select and submit for the Commander-in-Chief's approbation all officers and persons to be employed in the medical department abroad, and at home."

On these instructions I have acted since I had the honour to be appointed to the office I now hold.

A statement is enclosed of the qualifications required of every candidate for appointment to the medical department of the army, which further gives the age at which they are admissible to the service. I find, however, the actual age of those admitted to be between 23 and 24 years.

When a candidate is found to possess the required qualifications, his name with a detail of his education and qualifications are entered at length in the book of candidates, and in submitting names to the Commander-in-Chief, the only preference given beyond the standing in the book, is to those of very high qualifications, and to the sons or orphans of military or medical officers, who have suffered grievously in the service, but the name of no candidate is submitted who does not possess the required qualifications.

Every candidate is examined by a board of medical officers at which I preside, and it is required that his diplomas, all vouchers of qualifications, certificates of the different professors and lecturers, of regular attendance, and likewise certificates of moral character and conduct, be deposited in my office ten days before the day of examination for inspection and examination. Unless by the proceedings of a Court of Inquiry, or of a Court Martial, there appears anything to warrant an officer being passed over, I invariably adopt the rule of seniority in the service in recommending the promotion of assistant surgeons to regimental surgeoncies, of regimental surgeons to staff surgeons, and of staff surgeons to be assistant inspectors of hospitals; but in recommending to the two higher ranks, viz. those of deputy inspector general and inspector general of hospitals, I find it expedient to adopt a different line. As the officers of these two classes are for general and extensive superintendence on foreign stations, I think it right to make a selection, and to recommend (from the knowledge I possess of the merits and talents of all), an officer who unites with a thorough knowledge of the service, and of the professional duties, talent for arrangement and habits of business, together with discretion, discernment, and conciliatory manners, and who can, from his character in the service, command the respect of those acting under him.

A copy of the warrant of 29th July, 1830 (Paper B.) which is annexed, will explain the course of promotion in the medical department of the army, and show the rates of full pay; and the extracts from the Warrant, of 22d July, 1830, (Paper C.) will show the rates of half-pay.

(Signed) J. MC GRIGOR, Director-General.

I ——————*, —— years of age, a candidate for employment in the medical department of the army, do hereby attest my readiness to engage for general service, whether at home or abroad, and to proceed on duty immediately on being Gazetted.

I declare my age not to exceed twenty-six years, that I am unmarried, and that I labour under no mental nor constitutional disease, nor physical debility, that can interfere with the most efficient discharge of the duties of a medical officer.

(Signature.)

* Christian and surname at full length.

I have pursued the undermentioned course of study, of which I am ready to produce the vouchers for registry, and also a certificate of my age; namely:—

I possess certificates of regular attendance of the undermentioned hospitals and courses of lectures for the number of months stated:—

	Months.
The ——— Hospital or Infirmary for	
The ——— Hospital for Mental Derangement for	"
The ——— Hospital for Diseases of the Eye for	"
The ——— Lying-in Hospital for	"

Stating the number of Lectures in each course. Lectures.	Professors' Names.	Place.	Period in months.
Anatomy and Physiology, by . . . . (Stating the number of Lectures of each course on separate days.)			
Practical Anatomy, by . . . . . (Stating number of subjects dissected.)			
Surgery, by			
Clinical Surgery, by			
Military Surgery, by			
Institutes of Medicine, by . . .			
Practice of Medicine or General Pathology, by			
Clinical Lectures on the Practice of Physic, by			
Midwifery, by			
Chemistry, by			
Practical Chemistry, by			
Botany, by			
Materia Medica, by			
Practical Pharmacy or an Apprenticeship			
Forensic Medicine, by			
Morbid Anatomy and Pathology, by			
Natural History, by			
Natural Philosophy, by			
Moral Philosophy, by			
Mathematics, by			

I have the Degree of A.M. or A.B. from the University of
I have the Degree of M.D. from the University of
I have a Diploma for Surgery from the College of Surgeons of
(Signature.)
(Date.)
(Place of residence.)

* The date of graduation to be stated.

1st. In selecting from among the candidates for the medical department of the army, a preference is given to those who can fill up all the blanks in the preceding pages, by having the acquirements there stated, but the name of no gentleman can be placed on the list who does not possess the Diploma of either of the Colleges of Surgeons of London, Edinburgh, or Dublin, and who cannot produce the following testimonials:—

18 Months' attendance on an hospital of celebrity, where the average number of in-patients is not less than 80.
24 " Anatomy.
12 " Practical Anatomy.
12 " Surgery, or (what is preferred) six months' Surgery and six months' Military Surgery.
6 " Clinical Surgery, a complete course of two or three lectures during the week.
12 " Practice of Physic, or six months' Practice of Physic and six months' General Pathology.
6 " Clinical Lectures on ditto, the same as required in surgery.
12 " Chemistry.
6 " Practical Chemistry.
3 " Botany.
4 " Materia Medica.
3 " Practical Pharmacy or Apprenticeship.
5 " Natural History.
4 " Midwifery.

2d. The candidates must be unmarried, not beyond 26 years of age, nor under 21 years.

3d. Candidates who have had an University education, and have the degree of A.M. as well as that of M.D. will be preferred, but a liberal education, and a competent knowledge of the Greek and Latin Languages are indispensably requisite in every candidate.

4th. The greater the attainments of the candidates in various branches of science, in addition to competent professional knowledge, the more eligible will they subsequently be deemed for promotion in the service; for selections to fill vacancies will be guided more by reference to such acquirements than to mere seniority.

5th. The rank of physician to the forces, or assistant inspector of hospitals, requires, in addition to the knowledge and experience to be gained in the regular progress of study and experience in the service, that the individual should be a fellow or licentiate of the Royal College of Physicians, of London, or a graduate of the University of Oxford, Cambridge, Edinburgh, Dublin, Glasgow, Aberdeen, or of the Faculty of Medicine of Glasgow.

6th. Although the British schools are specified, it is to be understood that candidates who have received regular education in approved foreign universities, or schools, will be admitted to examination.

7th. With the exception of Practice of Physic and Clinical Medicine by one teacher, candidates must have attended separate lectures for each branch of science.

8th. Before promotion from the rank of assistant surgeon to any higher rank, every gentleman must be prepared for such other examination as may be ordered before a Board of Medical Officers.

9th. Diplomas, tickets of attendance on lectures, and certificates of regular attendance by each professor or lecturer, must be lodged at this office for examination and registry at least one week before the candidate appears for examination, and likewise certificates of moral conduct and character, one of them by a clergyman, and that of the parochial minister is desirable. Baptismal certificates are required at the same time; if the parish register cannot be resorted to, an affidavit from one of the parents, or some person who can attest the fact, will be accepted.

10th. The certificate of the teacher of Practical Anatomy must state the number of subjects or parts dissected by the pupil.

11th. Certificates of lectures and attendance must be from physicians or surgeons of the recognized Colleges of Physicians and Surgeons in the United Kingdom, or of foreign Universities.

According to the Royal Warrant 29th July, 1830, the following regulations were put in force: * * * *

Assistant Surgeon.—No medical candidate who has not passed his examination at the Royal College of Surgeons in London, Edinburgh, or Dublin, shall be eligible for this commission; and the assistant surgeon must have served on full-pay five years before he shall be eligible for promotion to the rank of regimental surgeon; and seven years before he shall be eligible for the rank of staff surgeon.

5. Regimental surgeons and staff surgeons must have served ten years in the army upon full-pay, before they shall be eligible for the next step of rank.

6. An assistant inspector of hospitals must have served three years at home, and two years abroad, in this rank before he shall be eligible for promotion.

7. A deputy inspector general of hospitals must have served five years at home, and three years abroad in this rank, before he shall be eligible for promotion to the highest rank of inspector general.

8. The rates of daily pay for the before-mentioned ranks are in future to be regulated by the length of time which the officers of each class shall have served upon full-pay according to the annexed scale; provided always, that when an officer is hereafter promoted, he shall commence upon the minimum pay of his new rank, notwithstanding his length of service, agreeably to the said scale, may give him a claim to a higher rate of pay, as before he shall be allowed such higher rate of pay, he will be required to serve on each inferior rate of pay attached to his rank the following period, viz. one year, if he had been in the medical department antecedently to the date of this warrant, and two years if he received his first medical commission subsequently to that date. But if the officer thus

promoted had higher pay in his old rank than the minimum of his new rank, he shall commence upon that rate of pay which may be next above his former pay, and before he obtains any further increase, shall serve the period above prescribed, viz :—

RANKS.	Rates of daily pay, subject to the above provisions.											
	After 25 years' Actual Service			After 20, but under 25 years' Actual Service			After 10, but under 20 years' Actual Service			Under 10 years' Actual Service		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Assistant Surgeon	0	10	0	0	10	0	0	10	0	0	7	6
Regimental Surgeon.. ..	1	2	0	0	19	0	0	15	0	0	13	0
Staff Surgeon	1	3	0	1	0	0	0	16	0	0	14	0
Assistant Inspector	1	4	0	1	2	0	0	19	1			
Deputy Inspector General	1	10	0	1	8	0	1	4	0			
Inspector General	2	5	0	1	18	0	1	15	0			

In addition to the pay of their ranks, the officers at the head of the medical department on foreign stations, shall receive allowances at the undermentioned rates, when serving under the following circumstances, viz :—

If with an army in the field of 10,000 men or upwards, 20s. a day.
ditto ditto 5,000 men " 15s. "
ditto ditto any less number, 10s. "

If serving in a colony where the forces consist of 1,500 men or upwards, 5s. a day.

By His Majesty's command,
(Signed) H. HARDINGE.

Having finished our analysis of the Report of the Commissioners, and exhibited to our readers the noble exertions made in behalf of their brethren by the Director General and by Mr. Guthrie, we would offer a few concluding remarks of our own—adding the testimony of Mr. Annesley as to the state of the Medical Establishments of India.

1. Parliamentary reports may be referred to and consulted by persons residing in England, or by officers returning from abroad; but to the greater proportion of naval and military surgeons—to the entire body of the medical service of India—these ponderous volumes with their valuable contents, are a sealed book. We feel therefore that, in presenting an analytic view of the Report of 1808, in a recent number, as well as of that of 1840, in our present issue, we do a welcome service to hundreds of our brethren abroad.

2. On the vital question of promotion, we would call especial attention to the fact that, in the scheme of promotion for the medical department of the British army, the officers of which are presumed on an average to pass more that half their period of service in temperate climates, it is intended that a man shall attain to the highest rank in fifteen years, or at

the age of thirty-nine. It is now hardly necessary to contrast such a plan of promotion—a plan urged by practical and experienced men, who have passed their lives with the soldier, in every climate, and in every situation, whether of peace or of war—with one of seniority—a plan which excludes the ablest officers from rising to the same grade, till by a service of forty years on an average, they shall have been worn out, and attained to about the sixty-fourth year of age.

3. If it be complained of in England as a most serious evil that, owing to the half-pay list, and other causes, which we hope are but temporary, promotion to the higher staff offices has been hitherto deferred to middle life, what are we to think of a system which, in India, prescribes a still more advanced age to the same responsible stations?

4. We would call the utmost attention to the evidences regarding the most important grade of staff surgeon; and we would ask, how in any country or in any service—how, least of all, in a seniority service, and in the climate of the East Indies—how such an officer as Mr. Guthrie describes the staff surgeon, is to be taken on the seniority principle, just because he stands at the head of the muster-roll?

5. What are too commonly and very carelessly called "experience," and "service," must not be confounded with "merit."

A man may serve for half a century, and yet neglect the opportunity of observing, or he may be incapable of observing. The mere "experience" and "service" of being borne so many years on the muster-roll is therefore emphatically and justly disallowed by both Sir James M'Grigor, and by Mr. Guthrie. Yet, for the respectable officer of long standing, the brevet by seniority, and the pension for length of service must be allowed to be both just and proper; while, at the same time, promotion by selection, in the instance of "merit," is equally necessary to the good of the service, as well as to the encouragement of men of talent.

6. The permanent establishment, however, of the two modes of promotion, just described, will, in the estimation of Mr. Guthrie, be of little avail, unless the regulated and limited tour of service in the several grades be rigorously enforced without exception, on ordinary service—at home as well as in the distant possessions of the empire.

7. On the subject of brevet, the conduct of the Commission is strange and contradictory in itself, and at variance with the most complete detail in proof, as given in evidence before the Commissioners. They declare it "not expedient to alter the existing rules with respect to the promotion of medical officers of the army, for the purpose of facilitating promotion upon half-pay or by brevet;" and they conclude by conferring brevet on the navy, which never had it, and by taking it away from the army, which partially enjoyed it since 1817.

We regret to say that this is not the only instance in which the "Report" is at direct variance with the best proof in evidence. The Commission* of 1808 performed its duty in an upright and honourable manner, while that of 1840 took but a contracted and an unkind view of the important matters under investigation. It is curious to observe that a Commission composed of gentlemen in civil life, Members of Parliament, to every one

* J. Drinkwater,
Samuel C. Cox,
Giles Templeman,
Henry Peters,
Chas. Bosanquet,
B. C. Stephenson,
L. Bradshaw.

of whom "the subject of inquiry was new," should nevertheless have investigated and opened out the entire matter so fully, as to leave it impossible for the Government any longer to continue the jobs and abuses of the Medical Board, whilst another Commission, comprising the greatest of our surviving naval and military commanders, should have done worse than nothing. But such we shall ever find it.

It was said long ago by Robert Jackson that, we had no hope but from the legislative authority, and we would do well to remember a fact often proved in the honourable endeavours of one of the most able and honest of our body. Pitt knew of the existence of enormous abuses, and remained silent, as did the military authorities; but the Commission of 1808, be it remembered again, declared and proved the "most essential measure" to be the "discontinuance of the present Army Medical Board"—a measure, we venture to say we have proved more than once to be quite as "essential" in the East Indies in the present day.

8. Strange as it may appear, we have not a warm friend in the highest military place. It would seem that, to make sure friends for us, our commanders must be shot, and that frequently.

Out of what, in the British Army, is called the heroic school of Abercrombie, we have at all times numbered the ablest and the most powerful friends, such as Moore, Hope, Graham, and others. But it is not in the nature of things that men of such a school should be long-lived; and in Moore especially we lost our ablest and best friend. The renowned Chief who at present rules the military affairs of England—the Chief whom no one, now-a-days, ventures to gainsay, whether he be in the right or in the wrong—never chanced to have had a shot to pass either through his body, or through the long bones; and, as he is not likely to adopt, either the profound views of Napoleon, or the friendly generous sentiments of Abercrombie and Moore, and cannot see that in treating us as a caste, separate from the army, he is doing the public service an injury, and us an injustice; matters, we fear, will remain as they are for the present. But, joking apart, it is really thus with us; and nothing else stands in our way, or has deprived us of the brevet, to which we are so clearly entitled, or of the military honours, which are as clearly our due.

9. We would once more call the attention of our military brethren to paragraphs 2, 4, 5, and 11 of Sir James M'Grigor's evidence; and to the declarations of Mr. Guthrie, that, under the old administration of the "Board," the very profession of military surgeon fell into contempt, while the army, the country, and the profession at large, "benefited nothing;"—indeed, the loss of life from the inefficiency and inexperience of all classes,—the choosers and the chosen—diminished the numbers of of the army "more effectually than the enemy." On the other hand, under a system of judicious selection of military surgeons, Mr. Guthrie had "the happiness of knowing that they," his brethren, "have been the means of preventing and of alleviating much human suffering and misery of saving great numbers of lives, and of originating one half of the improvements which took place in surgery during that eventful period,"—that of the Peninsular war, when men like Mr. Guthrie forced their way to eminence through the dregs of the old system, and raised "a surgical reputation which has not been excelled by that of any nation in Europe."

We would in like manner again call attention to paragraphs 9 and 10 as well as to the whole analysis of Mr. Guthrie's evidence.

10. It is no less curious than interesting and important to find that while in Europe the noble profession of military surgeon was thus brought into general contempt, owing solely to mal-administration, the same result was brought about by exactly similar means in the East Indies. Mr. Annesley states :—that it is quite impossible the neglected and degraded state of the medical profession in India can have escaped the notice of the most common observer :—that he has long been of opinion that so lamentable a state of things can only have arisen from inefficient administration, caused by a seniority system of promotion—a system, he regrets to say, which has infested the service from the earliest times—even before the institution of Boards in 1786 :—that in these times too, a very inferior class of officers were admitted into the service, and gave to it a low tone; —that though there were, at the same time, some individuals of high character and repute, the bad and inferior vastly prevailed ;—that therefore, it is no matter of surprise to find a department that ought, from its paramount importance to the welfare of armies, to stand high in order and estimation, suffered the most serious deterioration :—that, on the other hand, it is matter of wonder how a Government, which could not be ignorant of the defects of the service should nevertheless, and with such materials, have adopted a system of promotion and administration, for the medical department, at variance with every other department of the service ; for instance, the members of council, of military boards, of boards of revenue, and of trade, have ever been selected officers :—that seniority was never thought of but in that department alone wherein it was calculated to do most injury to the public service :—that a system which takes for the control and management of a great department, three men, just as they stand in seniority order—no matter what their character or qualification—cannot be otherwise than bad, as it is quite impossible that any number of men taken consecutively, shall possess the professional character, energy, and administrative talent necessary to the welfare of the army ; —that officers with all the necessary qualifications can, however, be found at all times, and in the required numbers, by another system—that of selection :—that public departments always take their tone from their heads, and that the efficiency with which business is carried on depends entirely on these heads :—that if discretion and energy be wanting at the head, the details of every branch must of necessity be badly conducted :—that it is so, and has long been so, in India :—that the Board of Madras was governed by such feelings that no person could have confidence :—that they showed no knowledge of their profession :—that in his time the members themselves were quite aware of all this :—that the entire system adopted by the Board was confessedly bad :—that when the Board did possess power and patronage it was used, never from public considerations, but from private views :—that men of worth and talent were neglected, while the idle, the careless, the most indifferent, and the most ignorant were protected and promoted :—that, in short, cringing, idleness, neglect, and ignorance had a better chance, under the Board, than talent and industry : —that, though this depraving system, he has known officers become " old Indians, with all their follies, before they had been two years in India :"—

that the chief boast of the members was the number of years they had lived in India :*—that so unworthy was the conduct of the Board, in the important matter of patronage, that this power was obliged to be withdrawn by a special and direct order from the Home Government :—that however respectable in private life some individual members. Boards constituted like those of India, never have, and never can command the confidence of the government, the respect of the services, or of the profession at large :—that in truth they degrade the profession, and injure the service :—that it is hoped the recent improvements in the pensions and in the mode of promotion, ordered by the Home Government, will prove beneficial, if the latter be vigorously and systematically acted on :—that whatever the Indian medical services may formerly have been, there were amongst them, and there are now in greater numbers, men of as high a character for talent and experience, as in any public service in the world : —that from such men as these the most efficient staff might at all times, and may now, be selected :—that it is only because men of an opposite character have hitherto been placed in the higher stations that the whole establishment has been contemned, underrated, and undervalued.

11. That, after a full and careful consideration of the whole subject, Mr. Annesley would recommend that the medical services of India be made immediately to approximate as nearly as possible, to that of Her Majesty's army :—that there should be one responsible head as Director General, with three secretaries, who should conduct the duties as follows :—one for general correspondence, checking commissariat supplies and indents, which would give ample employment to one officer—one for medical stores, medical accounts and expenditures—and one for business purely professional, including the statistics of the army, medical topography, &c. ;—that it is now unnecessary to notice how these various and necessary duties have hitherto been performed by one secretary at each of the Presidencies :—that the cost of the Board, as now constituted at Madras, is as follows :—

	Rupees.
Three Members at 2,450 rupees per Mensem. .	.. 7,350
One Secretary at 700 „ „	 700
	8,050 :—

that Mr. Annesley would propose, instead of the above plan, the following for the Madras Presidency :—

	Rupees.
A Director General, at per Mensem	 3,000
Three Secretaries, at per Mensem, 700 rupees each	2,100
	5,100 :—

that by such an arrangement the efficiency of the department would be

* A member of the Bengal Board, lately returned,—a genuine sample of the seniority system—boasted, to his fellow-passengers on the homeward voyage, that he had entered at the bung-hole and come out at the hawse-hole of the service, in the course of his forty-three years' residence ;—an elegant improvement this upon the Ab ovo usque ad mala of Horace!

enormously enhanced, while a saving would accrue of rs. 2950 per mensem of the public money:—that, in addition to a complete regimental medical staff of one surgeon and one assistant to every native battalion of one thousand men, there should be for every division of an army in the field, one deputy inspector, two staff surgeons, three staff assistant surgeons, three apothecaries, four assistant apothecaries, and five dressers:—that ten doolies should be attached to the medical staff here cited, for the use of head quarters, sick officers, rear guards, &c.:—that eight hospital tents should also be attached to the same staff, quite independently of the usual supply of sick tents supplied from the line:—that a medical store-keeper with complete establishment be also attached to the above staff, which officer should never be employed on extra duties, but confined exclusively to his proper duties:—that a staff so arranged, and being well selected, would be perfect for a division of ten thousand men:—that a want of selection in officers, and in proper field arrangement has, to his personal knowledge, proved a serious impediment in Indian campaigns, and a source of grievous loss of life, just as in other parts of the world:—that under an intelligent and energetic head, such establishment as is here described will be found to meet every emergency:—that all the sick carriage, and its order of march, should be under the orders of the chief medical staff, who will so arrange that not a sick man, woman, or child, is ever found to encumber the rear-guard:—that it will be easy to apportion the number and the grades of medical staff to the existing divisions of the Indian army in cantonments, holding in view their constant liability to immediate field service.

Such is the evidence afforded to us in the documentary and verbal forms by Mr. Annesley—an officer who had the almost singular distinction of passing with public honour through every grade of the Indian medical service,—even unto the "Board"—who served in the campaigns of 1801-2-3 and 4, in the South of India—at the capture and occupation of Java, as surgeon to H. M. 78th regiment, and subsequently as Staff Surgeon on that island—who served as Staff Surgeon to the Army of Reserve in 1815—who served as chief of the Medical Staff to the 1st and 3d divisions of the Army of the South of India, in 1817-18 and 19, up to the battle of Mahidpore, and the capture of Talnair—whose eminent services were acknowledged in the most public manner by the Governments of India at home and abroad, as well as by the Lords Commissioners of the Admiralty—who terminated a career of uncommon activity and usefulness by being placed in the Medical Board at Madras—a position the least satisfactory to himself, or congenial to his ardent and enterprising disposition, of any he ever held;—indeed, the only office in which he found it difficult to serve creditably and usefully—a gentleman of the highest reputation for honour and integrity—an officer who stands in the foremost ranks of tropical military physicians—an approved author, a man of energetic mind, of enlarged and liberal views.

Perhaps we may hear the testimony of this officer objected to by persons who have passed their lives in extra-professional or engrossing civil occupations, or by poetical and suicidal secretaries to medical boards, or by respectable old gentlemen whose acquaintance with armies has not gone beyond the smooth glacis of Fort William and Fort St. George; but these gentlemen

and their notions we shall notice only, by laughing at them. We leave them to die, along with the "Boards," of their own absurdity; while we again laugh at their groans over the improved and improving knowledge and spirit of the times.

13. We find again that, while a medical board in Bengal was wrangling about red coats bound in black velvet—about white pantaloons, cocked-hats and black feathers—a senior member of a quondam Madras board was occupied in much the same dignified manner. "Would it be credited," says Mr. Annesley, "and yet it is very true that, the first member of the medical board actually made a remonstrance that the profession felt degraded, because the superintending surgeons were not allowed to wear a gold button-hole." Mr. Annesley declares that, in his time, rank was estimated by the members of the board, not by the professional dignity it conferred, or the position in the army it commanded, but by the high and important considerations of the position of the official circles in Madras it would secure to their wives, and the supreme honour of seeing these ladies handed to dinner "by a member of council, or senior merchant!"

It is needless for us again to refer to the character and merits of Mr. Annesley; and we very much regret that an undue delicacy towards a system he knew to be bad, and towards persons whom he considered to be useless, should, during so many years past, have deterred that distinguished officer from dealing with, and exposing this vile system, and these official abuses, in the searching, unsparing, public manner, that could alone put them down, and put an end to them. He has done it now, however, and done it well.

14. The "Boards," whether in the East or the West, in the North or the South, are exact types of each other, and of that miserable system of organised neglect which, for sixty years, has marred the moral development and professional advancement of the Indian medical establishments, so far as "Boards" could mar a most able body of officers—a system that has never gone beyond the cut of the coat, or deeper than the skin of the wearer—a system that has never imagined a commencement at the heart, and a natural progress outwards—a system so miserable as to occasion the wonder no less than the contempt of every man capable of reflection—a system, however, which is now rapidly drawing to an end—*deploratus de medicis ac destitutus.*

15. Of the three grand requisites to efficient medical administration—a rapid promotion—a selection of staff officers—an experienced, able, vigorous and personal superintendence and control—we have absolutely none in India. This we have proved in every page—almost in every sentence, we have written on the subject.

Lastly. We would do the Governments of India, both at home and abroad, the justice to declare emphatically that, for the shameful neglect of the medical departments of the Indian army, they are not altogether responsible. A Government more considerate, just, and liberal, exists not, or one more disposed to place its servants on a footing of public and private respectability;—but, in the instance before us, the condition of the medical service, its neglected state, its wants, its disabilities, in all their relations, were never, until now, so far as we know, brought fully and fairly to the notice of authority. The services never united—the "Boards" never moved—nothing was ever said or complained of in the right quarter,

in the right manner, or with a full and proper knowledge of the subject:—no wonder that nothing was done.* But we have now done with this subject. We entered upon it with reluctance. We took the open public mode of exposing abuses, only when other and milder modes have failed. We *have* exposed these abuses, in a way not to be gainsaid. We had no personal views or interests to serve. We have done substantive good, and we hope to do more. We have no ill-will towards any persons. We wish well to the Service.

THE LIFE OF A TRAVELLING PHYSICIAN, FROM HIS FIRST INTRODUCTION TO PRACTICE; INCLUDING TWENTY YEARS' WANDERINGS THROUGH THE GREATER PART OF EUROPE. In three Volumes 8vo. Longman & Co. 1843.

FROM internal evidence in these volumes we think and hope that they do not embrace more than half of the "travelling physician's life"—though they may do that of "the *travelling life*" of the physician. The lively author arrived in this metropolis fresh from the schools of "Auld Reekie" in 1819, bringing with him a whole portfolio of introductory letters, not only to people in London, but residents in other countries. His health was bad in Scotland, and a warm climate was his object. But the voyage (not then by steam) completely restored him, and he was fit for anything. His reception by various medical men was very ludicrous—varying from the politeness, and even kindness of Sir Astley Cooper, down to the surly, unmannerly, and insulting audience of an overgrown aristocratic apothecary—a genus now pretty nearly extinct. After many ineffectual attempts to get into a dispensary, as the road to practice, our author obtained an appointment as domestic physician to a nobleman far advanced in consumption, and commencing his journey to a southern clime. Then did our author enter upon his "travelling life." These kinds of appointments

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* When Mr. Martin presented himself at the India House in support of the extension of his brother officers of the pension increasing according to length of service, and of the abolition of seniority as a ground for staff promotion—a ground as unwise and injurious in itself as opposed to the standing orders of the Bengal army—he was received with the utmost attention and consideration by every member of the Direction. His demands were just, and they were readily conceded.

It was another affair to obtain even a hearing from the Indian Minister of the Crown.

Here he had to contend with difficulties and delays of a nature impossible here to relate, for a whole year; and when these had all been overcome, and the Minister satisfied, and ready to act, a change of parties in the State took place, whence another year, more delays and difficulties, and more explanations were required. The new Minister, however, like the former, satisfied himself of the entire justice of the demands made upon him; but it is not too much to say that, but for the laborious and persevering exertions of Mr. Martin, no boon whatever would have been obtained for many a long year to come.

present more attractions than solid advantages to the young physician. We have rarely seen them turn out well in the long run. They are not equal, in any point of view, to the Army, Navy, or East India Service. They are shewy, toil-less, well-fed kinds of life; but, excepting for three or four years, between graduation at the schools and settlement in private practice, they are worse than useless, as far as regards success and reputation in the private walks of the profession. "Mais chacun a son gout."

The journey from London to PAU, for that was the final destination of the noble invalid, does not present anything that we can extract into a medical journal. It is cleverly written—as are the whole of the volumes—but not very profound; and scattering but very few particles of professional information or reflection in the general stream of description, anecdote and travelling gossip.

As might have been anticipated, the noble patient sank at Pau, and left his bones at Orthez. Our author makes very few remarks on the climate of this favourite locality, and still fewer on the mineral waters of the Pyrennees. The following passage is all that we can extract.

"With respect to the climate I can say but little in its favour. The cold was often very severe; and in the month of January the thermometer (Reaumur's) during three or four days, marked 20 degrees of frost. The air was at all times sharp; and the mountains invited the clouds to break upon them when their contents were about the freezing point, so that there was much cold rain in the Autumn. With the exception of these few days of severe frost the Winter much resembled such as I had remembered it in the middle counties of England. There was, certainly, as far as concerned temperature alone, nothing which should induce an invalid to leave an English climate, with the hope of finding a better at Pau. This, however, was a most extraordinary season. Some credit might be given to the assertion, as the cold was generally severe in the south of Europe. At Nice, the orange trees perished; but, upon the whole, we had not much to complain of. The Autumn was long, and there were many fine hours, which could be turned to good account, and then there was the *petit été de St. Martin*, which the French boast of in these latitudes, though sometimes it skips over Martinmas, and ushers in the Spring." 53.

The last rites performed to the remains of the nobleman, our author returned to London, and, by the advice of a friend in Thavies Inn, made a trial for a Dispensary. The adventures during the canvass are humorous and well told; but, in those days, a *new* batch of subscribers could turn the scale, and our author's purse not being so heavy as that of his competitor, he lost the day.

From domestic MEDICO to a Lord, the travelling physician became the inmate of a Prince's establishment in Paris, at a salary of £500 per annum, and the engagement for five years. We must pass over the whole of this period, for the professional narrative is almost nul; though the French capital might have afforded him a vast fund of medical and surgical information, had his propensities lain in that direction. The author became acquainted with Gall and Spurzheim, and plainly says that phrenology is the baseless fabric of a vision. In this we do not agree with him, but let that pass.

From Paris our author travelled with Prince —— towards Poland, giving slight sketches of the principal localities through which he passed. At

Carlsbad our author gives way to the usual exaggeration of the Sprudel leaping seven or eight feet high, and covering the valley with mineral vapour. His residence in Cracow enables him to give an animated description of the wretched state of the Jews in that Republic of Liberty. His remarks on the Poles themselves would lead us not to deplore their loss of national freedom and independence, of which they were unworthy. A Polish Nobleman, when he killed one of his serfs or peasants, was punished by the expenses of burying the murdered man—that was all! Our author's description of a Russo-Polish dinner on their route from Cracow to Odessa, is a real gastronomic curiosity, well deserving the study of all those who are investigating the physiology of digestion. It was at the castle of an octogenarian lady, who had long figured in the court circles of Catherine of Russia.

"Behind each person stood a servant, not dressed in the most splendid livery. The dinner commenced by slices of cold ham handed round in a dish; then a cold *pâté* of the livers of geese; then a salad consisting of craw fish garnished with slices of beet root, and, lastly, some thin slices of Parmesan cheese.

"Being myself fond of cold meats, I congratulated myself upon having made a good dinner, though I could have devoured more with pleasure; but as I saw the other guests help themselves but sparingly I could but follow their example. I was about to ask for a third slice of bread, having consumed the two portions of white and brown which were placed before me, when I opened the eyes of astonishment upon the entry of the soup. Not knowing how to act, I watched the operations of the Countess, thinking that I could not do wrong if I followed her example. I despatched a plate full of craw fish soup, than which I never tasted anything more exquisite, and, seeing the hostess qualify it with a glass of wine, I filled my glass from a bottle near me; the doctor's place being, as I have before observed, at the end of the table. Whether she perceived any wryness in my face as I gulped down the sour wine, I know not, but she ordered the man behind her chair to put beer and kvass upon the board, and immediately a bottle of each was placed before me. I partook of both during the repast, but they were not to my taste. I now found a large sirloin of beef at my left shoulder. The countess had already helped herself very plentifully, but, after having tasted a mouthful or two, she sent her plate away, which she did with two-thirds of the dishes. I found that a favourite servant enjoyed the privilege of eating off her mistress's plate, who was now employed in groping with her fork in a black earthenware jug, from the top of which a bladder had been partially removed, to pick out some stewed kidneys, which she consumed with a peculiar gusto. This dish was not handed round. Some buckwheat, boiled, and served up with cold butter in a saucer, followed the beef. I took the liberty of allowing this dish to pass, having indeed dined before the arrival of the soup: as I saw in what way the hostess treated her platefuls, I was easy upon this score. The next temptation presented itself in the shape of stewed carp, of which I partook, but they had the real muddy taste of the species; they were well dressed, and seemed to be approved. Had the wine been better, it might have stimulated my stomach to a little longer warfare; as it was, I was quite *hors du combat*, and saw with pleasure what I supposed to be the last dish, in some chickens stuffed with parsley. I had often heard that eating and drinking to excess were very hard labour, and I seemed to be proving the truth of the adage; the chickens being handed to me, I summoned up courage and took a wing to play with; and on my plate being removed, I found a plum pudding at my elbow. Not venturing to attack this dish (the *mehlspeise* of the Germans,) another was presented, consisting of fine asparagus covered with a sweet sauce. I had no alternative but to die of apoplexy, or cease to eat altogether. I preferred the latter. I had now

only to gaze and wonder at the capacity of the guests' stomachs, most of whom partook of every dish which was presented to them, and many asked me why I did not eat. The asparagus was succeeded by an immense joint of roast veal, served with salad, and the repast was terminated by a pile of cold craw fish, which were picked and eaten as a kind of *passe tempe*. Little conversation, or only monosyllabic dialogues enlivened the meal: all seemed anxious to lay in a stock of the *vis vitæ* only." Vol. 2, p. 43.

How would Abernethy have stared had he been present at the above dinner! How would Jephson have stamped, and ordered the dishes off the table! It is scarcely credible, were it not authenticated by daily observation, that the human stomach can receive—to digest is out of the question—such a monstrous mass of heterogeneous materials at one meal!

On their way to Odessa, they encountered a cloud of locusts that darkened the air, and destroyed every particle of green vegetable on which they alighted. At Odessa, where the Imperial court resided at the time, our author appears to have picked up a tolerable harvest in the fee trade; but as the land of locusts did not present a good field for fattening a physician, our travelling physician counted his rubles, and started for St. Petersburg, in company with one of his own countrymen, who was also an adventurer in life, but not of the medical profession. The journey is described amusingly, like all other parts of the work, but offers nothing for medical remark.

Our author had obtained permission from the Emperor Alexander at Odessa to practice his profession throughout Russia, without submitting to an examination at St. Petersburg, and having been graciously received by the Minister of the Interior, and the President of the Medico-Chirurgical Acadmey—his name was registered among the free practitioners—and now only wanting patients to make him a metropolitan instead of a "travelling physician." He soon got a patient—in the person of his female servant—who had a diarrhœa. He does not say whether or not he cured her. He then waited on all the grandees and others to whom he had recommendations.

"Some of the parties encouraged me to hope for success, as most of my countrymen had found it in Russia. Others made me polite bows, and received me standing. Some would not receive me at all." Vol. 2, p. 177.

After a considerable interval he was summoned to attend a Russian Princess—but princes and princesses are as plentiful in Russia as in Naples or Sicily—that is, like blackberries. In Russia a prince drove a hackney-coach for his bread. After the princess he had not a patient for six months, and began to look very blue on the occasion, especially as the thermometer was a huge way below Zero. At length on the 1st January, 1829, the chief English physician at St. Petersburg (we suppose Sir A. Crichton) resigned his practice to our author. "Now it was that the professional scale turned in my favour—now it was that I was to receive succour from an unexpected source—now it was that FATE triumphed over plans and systems." "During the remainder of my sojourn in Russia, I may briefly state that I have practised upon a moderately extensive scale." "As these extracts are *not* from professional life—we may say no more about the matter."

From the concluding passage, it is probable that our author may have in reserve his "professional memoirs," which he did not like to mix up with his "travelling life." We see no reason why a physician should not write as good a book of travels as any other person, provided he has had a liberal education, independent of his medical studies. On the contrary, we think the medical tourist has advantages peculiar to his profession, which may and have been turned to good account, both in travelling and in writing travels. We need only instance two living authors—Holland and Madden, as sufficient for our purpose. The present work, if we may be allowed to give an opinion, is written in a lively, often facetious style—sometimes, but not always, interspersed with deep reflection and acute observation. Political opinions, apparently from the mouths of other personages, are, we suspect, his own, and these will not find favour in every reviewer's sight. The author may, therefore, expect a few hornets about his ears, more troublesome than even the locusts who surrounded him in the Ukraine! We should like to see a key to all the blanks in these volumes. Some of the personages whose portraits are here drawn, we think we have seen. There is one which *appears* somewhat caricatured, and in it we imagine that we recognize Sir James Wylie, Bart. Physician to the late Emperor Alexander—but we may be wrong. We return our best thanks to the unknown, or at least anonymous author, for the entertainment and information we have derived from his amusing life, which we hope will be prolonged so that he may be able, twenty years hence, to give us three more volumes of professional travels through modern Babylon.

I. A Practical Treatise on the Diseases of Children. By *James Stewart*, M. D. New-York, 1841. 8vo. pp. 544.

II. The Diseases of Children. By *G. A. Rees*, M.R.C.S. London, 1841. 12mo. pp. 300.

III. The Maternal Management of Children in Health and Disease. By *Thomas Bull*, M.D. London, 1840. 12mo. pp. 302.

IV. Conseils aux Meres sur la Maniere d'elever les Enfans, &c. Par *Al. Donné*, M.D. Paris, 1842. 12mo. pp. 295.

It is a common, although we think a very erroneous, opinion, that the treatment of the diseases of infants and children is, on the whole, more difficult and unsatisfactory than that of the diseases of adults. Certain it is that the former branch of medical practice is much less generally well understood than the latter; and that many a physician, of admitted ability and skill in the management of the one, is yet egregiously deficient in a due knowledge of the other set of maladies. It is objected that, as young creatures cannot give us any distinct information with respect to the seat

and nature of their sufferings, we are necessarily left in considerable doubt, and must therefore be often puzzled what opinion we are to form, and what treatment we should adopt to relieve them. The objection is to a certain extent quite true; but then, to counterbalance this source of ambiguity, let us remember that the character of children's diseases is very generally much more simple and uncomplicated than that of the diseases of adults; moreover, that we have not to deal with the disturbing and perplexing influence of the mind, or its emotions of hope and fear and feverish anxiety; and lastly, that the conservative and restoring energies of the constitution are far greater in early life than in later years. Not only is the nosological catalogue of children's diseases comparatively very limited in point of number, but there is also a much greater uniformity in the character and course of the same disease, as it occurs in different individuals and at different seasons; and hence it comes to pass that we have not occasion for any great variety of remedies in the treatment, and that the pharmacopœia of infantile medicine, so to speak, is on the whole very small. With the possession of calomel and the hydrargyrum cum cretâ, of ipecacuan and Gregory's powder (magnesia, rhubarb and ginger,) of castor oil, salts, and nitre, not forgetting a due supply of leeches, the experienced practitioner will feel himself abundantly provided in ninety, nay perhaps in ninety and nine, out of every hundred cases that come under his notice. Certain classes of medicines are but seldom called into requisition at all. For example, how rarely have we any occasion for the use of Tonics in children's complaints: all that the young creatures, when much weakened, usually require for the recovery of their strength is a supply of light nourishing food after the stomach and bowels have been duly prepared for its reception. Then again, with respect to the classes of Narcotics, Antispasmodics, Diuretics, Alteratives, &c., it is certainly not often that we need resort but to the very simplest kinds of these medicines; such as a little syrup of poppies, sal volatile, and sweet nitre. A vast deal of harm is almost daily done by the use of stimulants and sedatives in children's complaints; and it is well known that the soothing and cordial syrups of the nursery, *Godfrey's*, *Daffy's*, *Dalby's*, &c. elixirs, have given a regular *quietus* to not a few of the young sufferers.

To judge aright of children's diseases, the medical man should attentively consider what are the peculiarities of their constitution compared with those of the adult system. This is a subject that has been very seldom dwelt upon in the very numerous works on this department of medicine with the attention that it deserves; and yet a right knowledge of this point seems to us to lie at the very foundation of any rational or successful system of infantile therapeutics. Let us for a moment consider the question; and first of all let us ask ourselves, what are the main peculiarities in the organisation of the child? They appear to us to be two-fold: viz. on the one hand, a preponderating size of the head and consequently an extra amount of blood sent to it; and, on the other, an extreme irritability and sensitiveness of the dermoid and mucous surfaces. The truth of these simple propositions is too obvious to require any illustration; and therefore, as our space is necessarily limited, we shall say nothing on this head, but proceed at once to inquire what are the practical conclusions to be drawn from their consideration.

The *first* one naturally leads to this most important therapeutic rule, that the head of the child should be uniformly kept exceedingly cool, in order to prevent any congestion or over-action in the vessels of the cerebrum.

From the very large quantity of blood sent to this organ, there must needs be a greater than usual tendency in early life to irritation and plethora within the head; more especially during the whole of that period when the early teeth are in a state of development and growth. Does not this consideration therefore at once suggest the utility of keeping the child's head exposed, and uncovered with warm caps, heavy bonnets, &c, and, in many cases, of wetting the scalp frequently with cold water, or any simple refrigerant lotion, while the rest of the body and more especially the feet are kept warm, with the view of diverting the course of the blood in another direction? Such a simple expedient as this, coupled with the use of an appropriate diet, of cooling laxatives, and of a leech or two occasionally to the temples if necessary, will often suffice to check the development of much future cerebral mischief, and enable the little sufferer to pass through the dangerous period of dentition with safety and comfort. And then what is the hygienic inference that we draw from the *second* position that we laid down; viz. the great tenderness and irritability of the skin and of the mucous passages? Is it not that the former should be duly protected against the inclemencies of a changeful climate and that the latter—we allude more particularly to the bowels—should not be irritated with stimulating or indigestible ingesta? Hence we are led to perceive the necessary importance of sufficient clothing, and of constant attention to the proper diet of children; and yet we see these simple directions transgressed over and over again among all the classes of the community, and often, too, under the very eyes of medical men.

As we wish to call the attention of our readers to the very useful works of Dr. *Ball* and M. *Donné*, we shall take the present opportunity of making some remarks on the *hygiene* of infant life, blending the results of our own experience with the observations of these gentlemen.

It is a shrewd remark of M. *Donné* that the management of an infant's health should commence, if we may so speak, from before its birth. The future vigour of the offspring depends so much on the health of the parent during the period of her pregnancy, that medical men cannot too often or too seriously remind their patients of the great importance of attention to this circumstance.

Most mothers seem to be not at all aware of its truth; else they would surely act on many occasions very differently from what we observe them to do.

Without entering minutely into the question of the management of women during the period of their gestation, we may here allude to one particular only—but this is a very important one—which is far too much overlooked in the present day; and yet to the neglect of which may often be traced the feebleness and bad health of the child after birth—we mean the importance of their taking regular exercise in the open air every day as long as circumstances will possibly allow. The injury that is often imperceptibly—on this very account, the more dangerous—done to the mother's constitution by remaining, as is too frequently done, whole days

and even weeks, if not months, within doors—perhaps in close confined rooms too—is immense. If spoken to on the subject, your patient will probably tell you that she feels very well, and that she is not sensible of any inconvenience to her health by the confinement. This may be all very true; she may not experience any ill effects at the time; but let her rest assured that nature's laws and nature's precepts cannot be disregarded without some future detriment ensuing either to herself or to her offspring. Does any plant or animal, we may ask, ever thrive as well under constant cover, as when exposed to the free air of heaven? certainly not; then why suppose that there can be any exception in the case of human beings. There is a simple, but very sound rule for our guidance on most points connected with the preservation of health, which deserves more attention than is usually given to it, and it is this: "Whatever does no good, does harm." True maxim! applicable to the discipline alike of mind and body.

By much in-door confinement, as M. *Donné* very truly remarks, the mother's system is weakened and rendered irritable, a feverish restlessness is induced, her appetite decays or becomes irregular and capricious, and her general comfort is often seriously marred during the remainder of her pregnancy. She thus becomes far less favourably prepared to pass through the pains and anxieties of child-birth without injury; she is rendered more liable to many puerperal complaints; and, if there was no other inconvenience, she is much less fitted, than she might otherwise have been, to be a good nurse to her child. The health of the latter so intimately depends first upon its own actual condition when born, and secondly on the quality of the food provided for it, that it must be quite unnecessary to enter upon any argument to prove that, unless the mother be thoroughly healthy and prepared, as Nature designed, to supply a due supply of sound wholesome food, we cannot reasonably expect that her offspring can be vigorous and robust. As well might we look for pure fair water to spring from a brackish well, or a thriving shrub to shoot out from a dry sandy soil. The great secret therefore of rearing a child well is unquestionably, in the first place, to see that the mother's health is kept in a sound and wholesome condition, so that there may be a regular and sufficiently, but not an over, abundant supply of wholesome milk. Now Nature has been exceedingly beneficent in her arrangements for this most important end, and it is only because we choose to deviate from them, and to act, so to speak, independently and often too at open variance with her wise appointments, that there are so many bad and incompetent nurses in the world. Is it not a matter of daily observation that a woman's health is seldom so uniformly good as during the whole period of her suckling? and do we not continually meet with cases where the usual course of complaints and diseases is obviously arrested by an All-merciful Providence for many months, in order that the helpless infant may be supplied with its natural food for a sufficient time to enable it to weather the subsequent trials of its orphaned life? We mention these circumstances to shew that Nature has done almost everything ready to our hands, and that, if we only did not wilfully thwart her most obvious intentions, we should seldom hear of the great difficulties, and often dangers too, that both mother and child are subject to during the period of suckling.

Let us briefly consider some of these difficulties, and endeavour to find out whence they arise and how they may be most advantageously treated.

The first that we allude to is the very common and ignorant practice of encouraging an excessive secretion of the milk, and the consequent suckling of the infant far more frequently than is necessary or wholsome. It is a very common opinion that a woman, while she is nursing, requires not only a very full diet of nourishing food, but also a good large allowance of some stimulating, usually fermented, liquor. "The ônly result," says Dr. *Bull* very truly, "of this plan is, to cause an unnatural degree of fulness in the system, which places the nurse on the brink of disease, and which of itself frequently puts a stop to the secretion of the milk, instead of increasing it. The right plan of proceeding is plain enough; only let attention be paid to the ordinary laws of health, and the mother, if she have a sound constitution, will make a better nurse than by any foolish deviation founded on ignorance and caprice."

Most suckling women in this country would consider themselves half-starved, if they were not allowed one or two pints of ale or porter per diem; and yet, might we not ask them how do their sisters thrive in other lands, where these Castalian beverages are unknown? Of this they may be assured, that, if a sufficient quantity of light wholesome nourishment be taken at regular intervals, and due attention be paid to other hygiénic rules, and especially to that of taking daily exercise in the open air, there will be no deficiency of milk, and the milk moreover will be of a better kind at the same time. How many a woman among the poorer classes in this country ruins her health by the common practice of forcing the secretion by drinking large quantities of beer of some sort or another! Now what is the usual effect of this practice? The appetite for solid food diminishes, the strength fails, the woman feels a sinking at the pit of the stomach, and a sense of dragging pain in the loins, and all the while the poor creature, attributing her every suffering to mere weakness, imagines that, if she only drinks more beer, she will be better. True it is, that her sufferings arise from weakness; but unfortunately she is pursuing the very plan to increase it. If she would abandon, for a time at least, the malt liquor, and live upon good wholesome meat and broth, and not over-suckle her infant, we should see fewer instances of broken constitutions among the mothers, and of shrivelled, decrepid and half-fed children at the breast.

Even among women in the higher and better educated classes of society, there is a vast deal of prevailing error, as to how they should manage their own diet, and regulate the suckling of their infants.

Many a young mother, on finding that for the first few weeks after confinement she has a great flow of milk, naturally supposes that she must be an excellent nurse, and that, if her baby does not thrive, it cannot possibly be from any fault on her part. The fault—if *fault* it can be called—arises from an affectionate over-desire to do all that she thinks likely to benefit her child. She therefore encourages what is popularly called a frequent 'draft in the breast;' and nothing certainly does this so effectually as consuming large quantities of malt liquor. But it is right that she should know that the mere abundance of the milk for the first month or so, is by no means a sure guarantee that it will continue so; or, if it

does, that the milk will necessarily be wholesome and nutritious. Most women—even those who afterwards may be obliged to give up suckling from the deficiency of the secretion—have a tolerably abundant supply for the first few weeks. Every thing, be it observed, at this time, has a tendency to promote it;—the heated room, the warm clothing, drinking large quantities of fluid, want of exercise, &c. But then, as the woman begins to resume her former habits, and recurs to her ordinary diet and *regime*, the secretion of the milk often becomes much less abundant, while the wants of the child become greater; or, if the quantity remains sufficient—probably in consequence of the nurse living chiefly on milk, liquor, and other fluids—the quality is perhaps poor, watery, and unnutritious. The practised eye will at once suspect this condition of the milk, partly from the looks of the mother, and in part from the general appearance and health of the child. If the former is pale and languid, if the white of the eyes be bluish, and the lips and tongue have lost their natural redness; if she complain of weakness in her back and limbs, and of a sense of faintness and sinking at the pit of the stomach—this last, we should say, is one of the most trustworthy of all the symptoms—especially after suckling, we may be pretty confident that the milk, however abundant, is watery and thin. A very common accompaniment of such symptoms in nurses is the existence, to a greater or less degree, of what is well known to them by the name of weakness; *i. e.* leucorrhœa.

When the milk is in this state, the child is observed not to thrive so well as might be expected, considering the frequency with which it takes the breast, and the abundant supply of the milk;* it is feverish, uncomfortable, and often crying; its bowels are very generally relaxed, and every now and then much purged; they are always more or less flatulent, and the infant is often teased with griping pains; the stools are seldom healthy, and the sleep is short and easily disturbed.

A much less frequent condition of the milk that we have to provide against is the reverse of all this—viz. the over-richness of a nurse's milk. This is very rarely the case with a mother suckling her own child; but every now and then we have occasion to observe its effects when young healthy nurses from the country are brought to town for the purpose of suckling the children of the higher classes. When the milk is too rich for an infant's stomach, it generally rejects more or less of it immediately after suckling; and, if it does not, it will be observed to be uncomfortable, and every now and then making an effort to retch for some time afterwards. As this condition however of the milk is certainly but of rare occurrence, we need say nothing more about it at present.

The practical inference from all that we have said is, that the diet of nurse should not differ in any great respect from what she is ordinarily accustomed to, and should consist of fresh and easily-digested animal food

* Indeed the appetite or craving of the infant for the breast is usually greater than usual; and for this very simple reason, that the milk, from being less substantial and nutritious than it ought to be, remains but a short time in the stomach, and passes without much change into the bowels. Here, therefore, is a simple sign—viz. the more frequent than usual desire of the infant for the breast—which may lead the nurse to suspect that her milk is defective in nutriment.

once or twice a day, with a due allowance of bread and vegetables, and a moderate quantity of sound well-fermented malt liquor. As long as the appetite and digestion continue healthy, there is no objection to this beverage; but if after a time, these begin to fail, then—instead of increasing the quantity of the ale or porter drunk, in order to compensate for the deficiency in the amount of the solid food taken—the use of it should be at once suspended for a few days, until the functions of the stomach be regulated and its energy restored.

The mother, indeed, will probably ask us, how is she to manage her baby; for, without her beer, she is sure that she will have no milk at all. This question leads us to the consideration of another one, of no trifling importance in the *hygiene* of infant life, to wit:—

Ought a child to have any other food but the breast milk for the first five or six months?

Like every other question in medical practice, this one does not admit of an answer applicable to all instances, and proper under all circumstances. The following remarks however will, we trust, assist the reader to determine the right course to be pursued in each individual case.

When the nurse is uniformly healthy, and when the child evidently thrives on her milk, gaining gradually more and more plumpness and strength, we may feel assured that it does not require any other sort of food. But let it be remembered that this fortunate state of things is by no means of very frequent occurrence—more especially among the residents of large towns—and that every deviation from the state of perfect health on the part of the nurse, is necessarily attended with a certain amount of change in the secretion of the breasts.

Now there are a thousand little things which are apt to do this. For example, a slight indigestion, any derangement of the bowels, more than ordinary fatigue, a sudden fright, over-anxiety, the receipt of bad news, and even excessive joy—these and many other troubles to which suckling women are exposed, all tend to affect the qualities of the milk. It is astonishing how little an affair will be sometimes followed by an alteration in the condition of this secretion—manifested, indeed, not in the health of the mother, but in that of the infant. Every experienced medical man must have seen cases where griping and purging were induced in an infant, in the course of a few hours after the nurse had taken one glass of port wine; and where its very life has been brought into jeopardy from the anxiety of the mother—in consequence, perhaps, of the sickness of another of her children.

Among the lower classes, we feel quite assured that three-fourths of infantile diseases may be attributed to the unwholesome state of the milk, induced by the impure and *drugged* malt liquors.

There is one cause—not a very common one, indeed, but sufficiently so to deserve notice—that is almost invariably accompanied with a derangement of the milk, and consequently of the infant's health—we allude to the occurrence of the periodical monthly indisposition in the nurse during the time of suckling. The intimate sympathy between the womb and the breasts is shewn by a variety of circumstances, but by none more obviously than

by this circumstance. It may be laid down as a very general truth, that whatever causes a diversion of the blood towards the former organ will induce a diminution in the secretion of the latter.

But not only is the quantity of the secretion diminished; it is almost invariably altered in quality. Hence, in nineteen out of twenty cases, where the nurse is apt to be *unwell* during suckling, the infant will suffer griping pains in the bowels, purging, sometimes fits, &c.—all which symptoms clearly shew that they are attributable to the food that is administered. We know, indeed, that some women will tell us that their baby does not seem to be at all affected by the cause now mentioned; but the medical man may rest assured that such is very rarely the case, and that in by far the majority of instances the very reverse holds true.

Let it not, however, be supposed that we should recommend a nurse to discontinue suckling altogether for this cause alone; but we do say that the less the child takes the breast under such circumstances the better, and that it should be fed chiefly by hand, as long as the menstrual discharge continues.

The inference we draw from these considerations is, that it will be prudent, even under the most favourable circumstances, not to trust to the breast *alone* in the rearing of a child; but to give occasionally such light food as may be a convenient substitute for the milk. Like the wise general, who will never commence a campaign, or even enter upon a single action, without providing a safe mode of retreat for his troops—knowing full well how some casualty, which no sagacity could foresee, may occur to baffle his most confident hopes—the physician will not be willing to trust all to the contingent health of the nurse, which is apt to suffer from such a variety of uncontrollable events. It is not because the infant, for the first four or six months of its life, has need of more nourishment than what a healthy nurse can supply, that we recommend the early use of other food at the same time;—but only that it may not suffer from the sudden change of diet which many circumstances may render necessary. And has not beneficent Nature herself suggested a useful lesson to us on this very point, in the working of those instincts that she has implanted in the lower animals to guide them in all their doings? How soon does the lamb begin to crop the herbage by the side of the ewe! and do we not see the pup and kitten trying to lap food, before they can well hold themselves erect upon their legs? We may be assured that we shall seldom err, if we but follow the promptings of Nature's directions on this as well as on a variety of other topics connected with the preservation of health.

We proceed now to another question:—

How often should the Child be fed in twenty-four hours?

This is unquestionably one of the most important rules of all, in the management of infants, to be rightly determined; and we are glad to find that Drs. *Bull* and *Donné* entirely agree with each other in the precepts which they give under this head. The former says—

"At the expiration of a week or so it is essentially necessary, and with some children this may be done with safety from the first day of suckling, to nurse

the infant at regular intervals of three or four hours, day and night. This allows sufficient time for each meal to be digested, and tends to keep the bowels of the child in order. Such regularity, moreover, will do much to obviate fretfulness, and that constant cry, which seems as if it could be allayed only by constantly putting the child to the breast." 8.

He afterwards adds, "in reference to night-nursing, I would suggest suckling the babe as late as ten o'clock p. m., and not putting it to the breast again until five o'clock the next morning. Many mothers have adopted this hint, with great advantage to their own health, and without the slightest detriment to that of the child. With the latter it soon becomes a habit; to induce it, however, it must be taught early."

M. *Donné* suggests that, during the first few weeks, the breast may be given every two hours or so, unless indeed the child sleeps a great deal, and then it requires to be applied less frequently: afterwards, once every three or four hours is amply sufficient. He very justly remarks that, as a matter of course, no exact or mathematical rules can be laid down on such a subject, and that a good deal must always be left to the discretion of the nurse. He expressly condemns the foolish practice of applying a child to the breast, whenever it begins to cry, and points out with great good sense the importance of having regular and stated hours for feeding.

As we expressed our own opinions on this subject in a late Number—vide Medico-Chirurgical Review for October, 1842, p 566—we shall not do more at present than offer two or three remarks on some of the evils of over feeding.

By far the greater number of infantile ailments arise from some disorder of the bowels, occasioning griping pains, vomiting, feverish restlessness, and not unfrequently 'inward fits' and convulsions. These symptoms are almost invariably owing either to the unwholesome quality, or to an excessive quantity, of the food administered. The evils of *stuffing* (to use a phrase more expressive than elegant) a child are soon sufficiently apparent. Often, as is well known, does Nature get rid of the excess by inducing vomiting of the superfluity; and mothers will sometimes pride themselves as being capital nurses when their infants give this most satisfactory sign of not being stinted of their allowance. Unfortunately the practice has much greater inconveniences than its unseemliness. The digestion of the food that is retained is almost always more or less interfered with, when the stomach has been once too full. It (the food) is not so readily exposed to the action of the gastric juice—the great agent in the process of digestion—nor does it favourably undergo those changes, which are necessary to fit it to become absorbed into the system and assimilated with the blood. This is not the only evil that is apt to follow; for the food, when imperfectly digested, will inevitably cause irritation of the bowels, as it passes along their highly sensitive surface, giving rise to griping pains, inward fits, and purging. Every nurse knows well that the alvine motions often exhibit portions of the curd of the milk quite unchanged. Is not this a most convincing proof that the child has swallowed more than it has been able to digest?* Diarrhœa in infants is the result as

* We may here mention one very simple, but most valuable, means of judging of the wholesomeness of food, especially in the case of children. Whenever any

often of over-feeding, as of the unwholesome quality of the milk or other food that has been given. Nature acts the part of the kind physician; she sets up an action to get rid of what is offending the bowels; and often little more is required to check the complaint than merely to restrict the suckling to certain intervals of time.

The Sleeping of Infants.

Ought an infant to sleep with the nurse? is a question very intimately connected with the one of which we have just been treating. All medical men will, as a matter of course, disapprove of the too common practice of a child being put to the breast four, five, or six times during the course of a night; and yet this practice cannot well be avoided, if the little creature sleeps with its nurse. The mere smell, arising from the mamma constantly near it, provokes a most unnecessary frequency of returning appetite; and if there was no other reason against it, this alone would be a sufficient one to condemn the practice of the mother and child sleeping together. For the first month or six weeks, while the young infant has but comparatively a feeble power of maintaining its own heat—a fact that has been so beautifully proved by the researches of *Edwards*—this may be proper; but after that time, it should be accustomed to sleep in a little bed or cot by the nurse's side. It is of more consequence to women in humble life than to those in more easy circumstances to attend to this advice, as it is of especial importance to the former that their sleep should not be unnecessarily disturbed. No woman can be a good nurse, who has not from six to eight hours good sound sleep every night. She may indeed wake once, or twice at most, to give suck to her infant during this time; but even this may be unnecessary after the second or third month, as a child will often rest quietly itself without requiring food from eleven at night to five or six next morning—provided it has been accustomed to be fed only at stated intervals, and to sleep by itself. M. *Donné* has some very sensible remarks on the inconveniences of accustoming children to fall asleep in the arms or on the knees of their nurse; the earlier that they are reconciled to the use of the cradle, assuredly the better.

So much for Food and Sleep; and now a few words on

Air and Exercise.

There are certain months of the year in this climate in which it is wiser, as a general rule, to keep infants within doors than expose them to the inclemencies and vicissitudes of the weather. It is to be remembered, as we have already mentioned, that their bodies have a much feebler power of generating heat than those of grown-up persons; and the circumstance moreover of their being merely passive creatures, incapable of taking such

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substance, or portion of it, passes through the bowels unchanged, we may be assured that it is indigestible, and should be prohibited. Hence cheese, the white of hard-boiled eggs, dried currants, &c. are certainly among the worst articles that can be given to a child. Many of the most dangerous cases of the *slow*, or remittent, fever of children are owing to an accumulation—which has been going on for a length of time—of such matters, along with the depraved secretion of the bile and the intestinal mucus in the bowels.

exercise as may stimulate the muscular and circulatory systems, renders them the more obnoxious to the injurious effects of undue exposure. If kept within doors, the nursery room should be large, lofty and cheerful; and, whenever the weather will permit, the windows may be thrown open. It is impossible to lay down any specific directions applicable to all cases, as much will depend upon a variety of circumstances touching the age of the child, its vigour and healthfulness, &c. &c.; but a well-instructed medical man can never experience any difficulty in advising what should be done. Unquestionably as a general rule, young children cannot be too much in the open air, whenever the weather is favourable; it is almost as necessary to them, as a means of vigorous health, as a due supply of wholesome food. Let us take a hint from what we observe in our daily walks.

Observe how all young creatures delight in the cool air of an open field, and how they pine when cribbed up in a cage or any close place within doors. It is just the same with our own infants; they cannot express, except by dumb signs, their satisfaction; but whoever is in the habit of watching their movements, from the earliest period of life, must have often observed the pleasure which they seem to feel in being exposed to the refreshing breath of a summer's breeze. Their skin, it should be remembered, is greatly more sensitive to the action of the air, and indeed to all outward impressions, than that of an adult. From its being very much thinner, and also exceedingly vascular, the circulation on the surface of the body has been thought by many to undergo a change somewhat similar to that which takes place in the lungs; the blood thus becoming more highly oxygenated in the superficial vessels, and all the energies of the system being thereby greatly increased.

However this may be, it is quite certain that young children suffer much more from confinement in a close atmosphere than grown-up persons; and it can, therefore, require no further argument to prove the great importance of the precept we have been endeavouring to inculcate.

Independently of these direct advantages to an infant from being much out in the open air, there are others which, though not so immediate and obvious, are well worthy of notice. Often, very often, it will be found that, when all means have failed within doors of lulling a child asleep during the day, the nurse has only to walk up and down a garden or field with it for a few minutes, and the object is at once gained. Who has not experienced the influence of Nature's sounds in soothing the mind, and inducing slumber, when this 'best balm' had been chased from the pillow?

And let it not be imagined that the infant is not as much affected by them as we are in after-life. It is probably much more so; and for this very simple reason, that the mind is not yet developed; the young creature is a being merely of sensation and perception, easily influenced by all outward impressions, and especially by those which act upon the senses of touch and hearing. The cool breezy air, the rustling of the trees, the hum of the insect, the chirrup of the bird, are all, we may be assured, perceived by the young being long before it can give any utterance to its joy, even by inarticulate sounds; and the wise nurse will therefore often gladly avail herself of these sweet provocatives of sleep, rather than always

trust to the rocking of the cradle, and the hush-hush droning of her own sweet voice.

There are, perhaps, even higher considerations than those of mere regard for health, that should induce mothers to have their children as much as possible in the open air. We know not, indeed, when the infant begins to notice the objects which it sees and hears, or how soon the impressions of good and evil, of love and hate, of sadness and joy are made upon its mind; but there cannot be a reasonable doubt, we think, that it is an observing, a remembering, perhaps even a reasoning being, long before it is generally imagined to be so. Hence the importance of surrounding children as frequently as possible with objects that, while they soothe, animate, while they gladden, elevate the mind; and where shall we find such objects so well as in the open fields and quiet woods?

But we must now draw our remarks on the Hygiene of early life to a close, and turn to the consideration of a few of the most important diseases to which children are exposed. We therefore take leave of the works of Dr. *Bull* and M. *Donné*—both of which are excellent guides in their way, and deserve to be generally known—and substitute for our text-books those of Mr. *Rees* and Dr. *Stewart*.

The first subject we shall notice, is the application of Auscultation—using this term in its widest acceptation—to the diagnosis of chest diseases in childhood.

Let us hear what our authors say.

According to Mr. *Rees'* experience—and our own is entirely in accordance with it—*Percussion* is of subordinate and only occasional use.

"It will not always yield that information in infants that it does in adults. A considerable portion of the lung may be rendered solid from inflammation in the former, and the chest not sound decidedly dull; and in cases where, after death, the lungs have been crowded with tubercles, I have failed to perceive any dullness on percussion. Nevertheless where hepatization is limited, as it mostly is, to the lower or upper lobes of one lung, percussion, if carefully performed, will detect it, even in infants, and with the auscultatory signs decide the diagnosis. In older children percussion is at times very valuable, for in them, as in adults, latent pneumonia proceeding to hepatization of a large portion of one lung is not uncommon; and in many cases, where the general symptoms have been vague and undefined, the breathing little affected and the cough trifling, percussion of the chest has led to the detection of hepatization of the lung, and directed to the treatment likely to prove successful." *Rees*, 90.

As an instance of the uncertainty of any one means of diagnosis, taken *by itself*, he alludes to an interesting case of pleuritic effusion in a child, three years of age, where the chest on percussion gave out a tympanitic resonance, while no respiratory murmur was perceptible: death ensued in the course of a day or two. On dissection, the lung was found to be quite solidified; but the cavity of the pleura—which was much thickened from false membrane—was perfectly empty, shreds of lymph passing across. "In this case," says our author, "the effusion must have been very considerable, and have been rapidly absorbed, before the thorax had contracted from the dilated size to which the fluid had expanded it."

With respect even to *Auscultation*, the young physician must not expect

to find that its indications are nearly so constant or so trustworthy for the purpose of diagnosis, in the young child as in the adult. It is obvious that Dr. *Stewart* does not speak from experience when he says that the respiratory sounds in general do not vary much in early life, and therefore do not require any particular description. Mr. *Rees* is, on the whole, much more judicious, as he expressly cautions his readers against the common error of attaching an undue importance to the auscultatory signs alone, especially in children's diseases, and without a sufficient attention to what have been called the 'rational symptoms.' Like every experienced practitioner, he does not allow one means of exploration ever to supersede the use of any other of established value.

In pneumonia in the child, the crepitant Rale is of rather uncertain occurrence. The sound is sometimes not to be heard at all; and when present, it does not always indicate the existence of pulmonic inflammation. Perhaps a more valuable sign, in the diagnosis of the early stage of the disease, is that first pointed out by Dr. *Stokes:* viz. an undue loudness of the respiratory murmur. Mr. *Rees* says: "I believe a knowledge of this fact will enable us to detect pneumonia in the child before other physical symptoms develop themselves." He proceeds to remark:—

"Where pneumonia has produced hepatization of any portion of the lung, it will be readily recognized, though no dullness be present, by the existence of bronchial respiration and bronchophony, which are remarkably distinct in the young subject; the latter is at times so tinny and shrill as almost to simulate egophony. Dr. Meriadec Laennec, indeed, speaks with some doubt as to the facility of distinguishing bronchial respiration from peurile vesicular respiration, but the writer with great diffidence states, as the result of extensive experience, that the difference is most palpable, and that the former is to be recognized in many cases where a very small portion of the organ beneath is affected. I believe the cry of an infant, with a large portion of lung hepatized, has sometimes a peculiar clang, which will lead one to suspect the presence of such change of structure." *Rees*, 93.

On the whole, the utility of Percussion and Auscultation is unquestionably not nearly so great in the diseases of children as in those of adults; while, on the other hand, that of careful inspection of the thorax is decidedly greater. Much most useful information, in many cases of thoracic disease, may be obtained by attentively examining the shape and movements of the ribs—which in early life are, it is well known, more yielding and flexible than they afterwards become. When a considerable portion of the lung becomes solidified, the corresponding part of the chest will very generally be found more or less drawn in; and in this way not a few cases of what is called 'pigeon-chest' are induced.

"Again," says our author, "if the primary air-passage itself be much obstructed, as in croup, from false membrane, or from abscesses occurring under the sterno-mastoid and pressing the trachea, the full expansion of the lung will be prevented, and this altered movement of the ribs apparent. While these movements of the chest indicate the above affections, immobility of the chest is one remarkable symptom in the earliest stage of pleurisy in the infant and child, the respiration being wholly abdominal.

"But not only the movements of the chest are affected, but the shape is

modified by disease of the lung; where, after pneumonia, the lung remains solid, it becomes after a time atrophied, and a contraction of the walls of the chest takes place, Dr. Stokes states. similar to that in pleurisy. I believe the contraction in the young child and infant is somewhat different; for where the lung in these has become atrophied, the contraction of the chest is effected by a falling in at the union of the ribs with their cartilages, giving the thorax at that part a channelled appearance." *Rees*, 96.

Pleuritis in young children is generally a sequela of scarlatina; and, as there is usually in such cases a marked tendency to other internal lesions —more especially to pericarditis and encephalic effusion—at the same time, the disease is unquestionably one of the most formidable that occurs in practice. The description of the symptoms given by Mr. *Rees* is very good :—

"The symptoms have been great dyspnœa, with short dry cough, and complaint of pain, as in the adult, with great fever. In the infant, such fever, with very rapid respiration, and constant teasing cough, have been the chief symptoms, with one other, which is the most characteristic, viz. extreme immobility of the chest in breathing, the respiration being wholly abdominal. When effusion results, the symptoms will be the same as in the adult—dullness, obliteration of intercostal depressions, enlargement of the affected side.

"But pleurisy may proceed in a very insidious manner in the child, and considerable effusion gradually take place, without any complaint of the chest being made by the patient. Twice I have met cases of this kind, where headache, with inability to move about, were all complained of; one of these was put down as hydrocephalus by the medical attendant. On examination, considerable effusion into the right pleura was discovered, for the discharge of which I performed paracentesis thoracis, and the child did well, contraction of the side resulting." *Rees*, 136.

Whenever, during the convalescence from scarlatina, the breathing becomes oppressed—and more especially if pyrexia be present, and the urine be scanty and deep-coloured at the same time—the physician should make a most careful examination of the thorax; for in nine cases out of ten it will be found that inflammation has commenced either in the pleura, lungs, or pericardium, or perhaps in all these parts simultaneously. The extreme rapidity with which the mischief, if not discovered and arrested, goes on to a fatal termination, cannot be too much impressed on the minds of all medical men. The delay of twenty-four hours will often suffice to convert a manageable into a desperate case; and this error is exceedingly apt to be committed, if there be not much feverishness present. The following graphic description of the onset and course of pericarditis after scarlatina evidently shows that it is drawn from personal observation :—

* * * "Before any active symptoms have developed themselves, if the stethoscope be applied over the heart, an alteration will be perceived in the sound, very distinct and characteristic, though not easily described; perhaps a ringing sound defines its character most accurately. After this is once heard, it will be easily recognized in another case, and may be put down as a sure symptom of incipient pericarditis. If this be neglected, in a few hours active symptoms come on; pyrexia, hurried breathing, palpitation, great irritability of temper, and restlessness, perhaps chorea; the pulse is full, thrilling, and irregular; on

listening to the heart the ringing sound is found superseded by bruit de soufflet. This state continues for a day or two, and the symptoms again alter; the countenance becomes livid, the dyspnœa is excessive, accompanied with short convulsive cough, sometimes with hiccough; the pulse is weak, fluttering, and irregular; on listening to the chest, the heart's action is scarcely perceptible, the sound lost, and the impulse slight. On percussion, dullness over the left side will be perceived to a larger extent than natural; all showing effusion has taken place; and in a few hours the patient expires, often suddenly and without a struggle."* 217.

The main thing to do in such cases is to form a right diagnosis; the treatment is abundantly obvious, and will very generally be successful, if resorted to sufficiently early. Detraction of blood, locally or generally, followed by the application of blisters, and the free use of hydragogue purgatives, are our best remedies. The administration of some mercurial at the same time, so as to affect the system, is also of great utility in most cases. One of the least fallible symptoms to guide our prognosis is the condition of the urine. As long as this remains scanty and deep-coloured, we may rest assured that there is some internal mischief either impending or already established. Indeed, this, the state of the urinary secretion, is the most important circumstance to be attended to in the management of scarlet fever; and whoever neglects his duty in this respect is exceedingly blameable. If the head be the part affected, when this condition of the urine is present, the danger is of the most imminent kind. We have known such cases prove fatal within 36 hours from the first invasion of the cephalic symptoms. This is the true *wasserschlag* of the German writers; and truly it may be called a *stroke*, from the frightful suddenness (apparent) of the attack, and the rapidity with which it hurries on to a fatal termination.

With respect to the treatment of pneumonic and bronchitic attacks in children, the only remark that we shall make is for the purpose of recommending most strongly the use of ipecacuan in frequently-repeated doses. A grain, with one or two grains of the hydrargyrum cum creta and as much carbonate of soda, may be given every four or six hours, according to the urgency of the symptoms; and in the intervals small doses of Epsom salts, nitre, and tincture of digitalis will be found to be of singular efficacy. Leeches must be applied to the chest—and immediately over the sternum is the right place on all occasions—as a matter of course; and, as the violence of the inflammation subsides, a blister between the shoulders should not be neglected.

Pathology of Laryngismus Stridulus.

The personal experience of most medical men will fully warrant, we feel assured, the conclusion to which Mr. *Rees* has come on this subject; viz:

* The peculiar sound to which Mr. *Rees* alludes in this passage, and which he very properly designates by the name of *ringing*, is the same, if we mistake not, which for many years past we have been in the habit of watching in cardiac diseases. The best idea that we can give of it is to say that it resembles the ringing noise or metallic resonance heard on striking an anvil with a light hammer. In our own note book, we have already described it as the 'metallic ringing.' It is a pretty constant symptom of the early stage of hypertrophy of the heart, especially if there be any slight narrowing of the aortic orifice at the same time.

that the cause of this peculiar affection is by no means uniformly the same in all cases; but that the 'fons et origo mali' may be seated either in the encephalon, in the thymus gland, or in the bronchial and cervical glands, as alleged by different authors.

"I have had many opportunities," says he, "of examining infants who have died from this affection. Among infants, otherwise apparently healthy, who have been suddenly cut off in a paroxysm of the child crowing, the most prevalent abnormal appearance has been hypertrophy of the thymus gland, more or less considerable, and in these infants I have failed to perceive any enlarged glands in the cervical region, though I have searched for them; the thymus gland has been of considerable size, weighing five, six, or even seven drachms.* In other cases where there has been during life cerebral symptoms associated with the spasmodic dyspnœa, there has been no such enlargement of the thymus, but the morbid appearances were confined to the brain and its meninges; opacity of the arachnoid, thickening of the same at the base and over the pons varolii, with considerable injection of the hemispheral veins, and numerous bloody points in the brain, being the chief morbid appearances. In some of these I have met with enlargement of the cervical and bronchial glands, and such I have found in infants who suffered with laryngismus stridulus during life, where neither hypertrophy of the thymus, nor any marked unhealthy appearances in the brain have been detectible. From the cases quoted by Dr. H. Ley, it is certain an enlargement of these glands is a very frequent post-mortem appearance. From what I have seen I cannot but imagine that no one post-mortem appearance is so constant as to justify us in considering the part presenting it the seat of the affection in all cases; and it may be inquired, if the spasm be induced, as Dr. H. Ley supposes, by irritation of the recurrent nerves, which seems so probable, whether the exciting cause may not be different in different cases. An hypertrophied thymus gland, or enlarged cervical or bronchial glands, may alike directly or indirectly by pressure embarrass the function of that nerve, nor does it seem difficult to imagine the spasm in other instances may be excited by cerebral disease situated at the base of the brain, and implicating the origin of the par vagum." *Rees*, 116.

Intestinal Disorders; Remittent Fever, &c.

So many of the diseases of children are connected with an unhealthy state of the intestinal contents, that, unless the medical attendant has his attention constantly directed to this subject—and, by-the-bye, he can rarely form an accurate opinion except by personal inspection of the evacuations—he will be often baffled in his best attempts to afford relief. We have almost daily occasion in our own practice to witness the effects of mismanagement in this respect, and not unfrequently to regret the negligence, or it may be the ignorance, of our professional brethren on the subject.

As a general remark, we may say that two-thirds, or even three-fourths, of the diseases of children arise from the presence of undigested food and vitiated secretions in the bowels; and that, unless the canal be thoroughly cleansed out, no permanent cure can be effected. Almost every case of what is called 'infantile remittent fever' arises from the cause now mentioned. In obstinate cases, the necessary purgation must be continued for two,

* "The largest weighed 3viiss. See letter by the author in the Lancet for May 22, 1841.

three, or even four weeks. Like every other mode of treatment indeed, this may be carried too far; and a state of intestinal irritation, as troublesome as the primary evil, may be induced in consequence.

There is much good sense and practical usefulness in the following observations of Mr. *Rees*. After urging the necessity of free purgation and a spare regulated diet, as long as the intestinal excretions are unhealthy and offensive, and there is considerable feverishness of the system, he points out an error, not unfrequently committed, of carrying the use of such means too far, merely because the tongue has not quite regained its healthy appearance, and an occasional feverishness of the system still remains behind.

"I believe," says he, "the most important therapeutic agent to be recommended, when such a state is present, is change of air, and this may prove of marked benefit in a very short time; the mucous membrane augmenting its secretions, and being thus enabled to digest the food, which, when administered before, acted as an irritating matter. Another most important agent is the warm bath; this may be used every evening, the patient remaining in ten minutes, and transferred to a warm blanket; this often exerts a powerful influence in restoring the mucous surfaces to healthy secretion. Of internal remedies, perhaps, the most useful will be the hyd. c. cret., given in small doses, every night for some little time; for an infant, a grain, or two grains, may be sufficient; this medicine will, at the same time that it acts beneficially on the system generally, have the effect of checking diarrhœa, which is often present. All active purgatives should be given as sparingly as possible; and the bowels kept regular by a dose of castor oil, or rhubarb and magnesia, every, or every other, morning.

"The great error, in the treatment of these children, is the endeavour to overcome the debility by stimulants, or tonics; the infant has wine and water administered, or the child is recommended full diet, and a little stout or wine; whereas, to give other than a very mild diet is to increase the debility by augmenting the irritation, which fact, though it appear plain to the reader, he will find it difficult so to explain and impress on the mind of the parent, that when his back is turned, his rules of diet shall not be forgotten. It will be, therefore, necessary to lay down very explicit rules. In the infant, irritation may be prolonged by the common practice of stopping every expression of suffering by thrusting the nipple into its mouth." *Rees*, 28.

We have only to add to these excellent simple rules that, in many such cases, not a little benefit will be obtained by keeping the head of the child uniformly cool—wetting it frequently with cold water during the day, and exposing it uncovered at night—and by the internal administration of small doses of *nitre* in conjunction with a few drops of tincture of digitalis. In larger doses, the nitre is a capital remedy in the early stage of febrile diarrhœa; it quiets the intestinal irritation, without directly checking the evacuations. If these continue to be too profuse, a few spoonfuls of the common chalk mixture will generally suffice to arrest them without danger. The less frequently that we make use of opium and of direct astringents in the diarrhœa of young children, the better: the Homœopathic doctrine—"similia similibus curantur"—is, as our author remarks, of safer application on the whole, at least in a great many cases. On several occasions, we have seen serious cephalic symptoms set in immediately upon the cessation of a relaxed state of the bowels, more especially if the irritation of teething was present at the same time. It is for this reason that

we are so partial to the use of nitre in many cases of febrile diarrhœa in children.

We proceed now to notice a disease of rare occurrence in this country, but which is exceedingly prevalent and very destructive in most parts of America: viz:

Cholera Infantum.

"It has been said," Dr. Stewart remarks, "by some of our writers, to be peculiar to the United States. This, however, appears to be an error, for Cleghorn, in his account of the diseases of Minorca, describes a disease, bearing symptoms in every respect corresponding to those of this disease.

"Wherever, therefore, there is great atmospheric heat, combined with malaria, and especially with that engendered by large collections of inhabitants, as in cities, there the disease is found. It is on this account extensively prevalent in our country; but is not dependent on heat alone, as it is observed that in some of our most southern sections of country it is not so rife as in New-York or Philadelphia. The open country is remarkably exempted from this scourge.

"It prevails mostly in cities, and is in some places a remarkably fatal disease. In Philadelphia it is much more fatal than in New-York or Boston; and in the latter city it has been doubted by some whether the disease exists in its genuine form."—*Stewart*, 213.

The irritation of teething and the use of improper food are the *predisposing*, but cannot be said to be the directly *exciting*, causes of this disease, as it is comparatively of rare occurrence in the rural districts. The Malaria of large towns must therefore have something to do with its development. The description of the purging is thus given by Dr. *Stewart*.

"For the most part, the diarrhœa will commence with the discharge of ordinary fecal matter, which very soon, however, changes to a thin, serous looking fluid, variously coloured. When the disease is fully formed, the ordinary feces are retained, and the evacuations are mostly of this watery fluid, coloured brown white, sometimes yellow and green. They are at times very offensive, and again without any other odour than what arises from acidity. In the greatest number of instances they are offensive, but not of the peculiar character which distinguishes fecal matter; it appears to be of the nature which characterizes the ordinary decomposition of animal matters. According to the location of the disease in different parts of the intestinal tube, the evacuations present a difference in their consistency and appearance; thus, when the lower portion of the intestines is affected, the disease bears a resemblance to dysentery, and the evacuations are slimy, gelatinous, and bloody; while tenesmus and pain, on evacuating the contents of the bowels, are very severe. In the most severe cases, the evacuations show the extent of the disease throughout the entire intestinal tract; and it is in such cases that they present a great difference in their appearance, including all the above varieties, and at times mixed with a frothy matter resembling yeast, and with imperfectly-digested food, or that which has passed almost unaltered."—*Stewart*, 216.

The vomiting is often a most unconquerable symptom. The average duration of the disease appears to be from two to three weeks. The essential necroscopic characters are, according to our author, engorgement and often very great enlargement of the liver, with the usual consequences of inflammation along the whole intestinal canal, more especially in the mucous follicles of the small bowels.

It is unnecessary to enter into particulars about the treatment, as the same therapeutic principles, which regulate our practice in other forms of

cholera, are equally applicable in this. We should say however that Dr. *Stewart* is far too much afraid of the consequences of emetics—which, if administered at first, are, in our opinion, most useful not only in dislodging a great quantity of vitiated bile from the stomach and bowels, but even in checking the very vomiting, which is so distressing a symptom of the disease. Mercurials are, it is admitted by almost all the American authors, more or less necessary in every case. One of the least objectionable astringents is the acetate of Lead, alone, or in combination with Dover's powder. Dr. *Lindsley*, of Washington, has given as much as four grains of the former and one of the latter every hour or two to a child eighteen months old. During the period of convalescence, the use of bitter infusions, of steel and other tonics, is usually necessary for some time. It has been very generally observed, that children crave much for salted meat and fish, while recovering from this disease; and the most experienced physicians, including Drs. *Rush*, *Parrish* and *Hosack*, have remarked that this instinct may be indulged not only with perfect safety, but with positive advantage to the health.

With this observation we close the present article. We have made it as practical as possible, and may therefore hope that it will be perused with some interest by most of our readers. The work of Dr. *Stewart* is not likely to acquire much circulation in this country, as it is rather a lengthened compendium of what has been written by others, than a summary of the results of his own observation and experience. That of Mr. *Rees*, although less complete as a treatise on the subject, is far more original; it is evidently written by a man who has seen much practice, and learned to observe and judge for himself.

BRIGHTON AND ITS THREE CLIMATES, &c. &c. &c. By *A. L. Wigan*, M. D. Octavo, pp. 71. Highley, 1843.

LONDON and Brighton have, of late, stretched forth towards each other the right hand of fellowship, with great alacrity. They are now distant from one another some twenty-five miles, and when the flying steamer shall have completely fledged its wings and fleeced its subscribers, the North end of the chain-pier will rest on Denmark-hill, and its southern on the English Channel. As it is, the metropolis pours daily its wealth into the PORTUS SALUTIS, while the latter makes a large return of HEALTH to the care-worn inhabitants of Modern Babylon. It may admit of dispute which place has the balance, or *exchange* in its favour. We are inclined to think that the Babylonians have the advantage—and for the reasons adduced some two thousand years ago by the Roman Bard.

> Prestat ARGENTO, superatque fulvum
> SANITAS aurum, superatque censum
> Quamvis ingentem—validæque vires
> Omnia prestant.

So say we;—though the money-makers and money-changers will not believe it till they have lost the invaluable blessing of health! Many a time, when the foul fiend of the fens had poured its gelid currents through our veins till our bodies shook like a lump of jelly in a bag—then parched us in an oven—and ultimately boiled us to a boullie—have we sought the pure and bracing breezes of Brighton—and never in vain—never without putting an extinguisher on the ague-monster, and dispelling the indescribable depression which his operations induce in the human fabric!!

Brighton, independent of its salubrious air, and freedom from all malarious impregnations, must always, from its proximity to London, as a sea-bathing place, command a superiority of selection for the citizens of London, while the artificial mineral waters, so successfully manufactured there, will also swell the stream of visitors to that favourite locality. Brighton is now to the vast metropolis what BAIÆ once was to the Eternal City on the seven hills.

The author of the present brochure, though long a resident in Brighton, is now a citizen of London, and cannot, therefore, be suspected of a sinister or self-interested *motive* in his observations, the whole of which, indeed, bear the impress of truth. The topography of Brighton has not been studied with any degree of minuteness by medical men, and there can be no doubt that this little pamphlet will be a welcome present to the profession, and still more so to the non-professional invalid, about to sojourn a while in the British Baiæ.

Dr. Wigan is not only well acquainted with Brighton, but with most of the favourite watering places both in this country and on the Continent. He can therefore speak comparatively as well as positively on the subject. We must pass entirely the introduction, which offers some excellent advice to invalids resorting to the coast for the sake of health.

The town of Brighton, Dr. W. remarks, may be divided into three parts—"The centre portion, extending from Cannon Place on the west, to the New Steyne, or even to Rock Gardens, on the east; and the two extremities, to Adelaide Terrace on the west, and to Arundel Terrace, Kemp Town, on the east, each inclusive;" or, in other words, the eastern, western, and centre portions.

The centre portion, being occupied by the permanent inhabitants, is most frequented, and indeed most recommended by the faculty in London. It differs very little, however, from an inland town in a low situation, and has nothing *bracing* in its atmosphere. Much annoyance is there experienced by the numerous steam-engines belonging to the baths and breweries, and the chimneys of private houses in the eastern and western portions, according to the direction of the wind, which blows from one or other of these quarters eight months in the year—from the north or south for the remainder.

"When the wind is due north the atmosphere at all seasons is beautifully transparent, and the whole town as brilliant as Genoa. In ordinary weather, although each extremity of the town is extremely clear, the middle portion has a mist (at least) which prevents the free ascent of the smoke, and the inhabitants of one end of the town can scarcely ever see the other extremity—each generally supposing the other end to be enveloped in smoke, when, in fact, it is as clear as his own portion.

"The centre of the town has been so effectually drained, and there is so much care employed to remove nuisances, that it is not objectionable to those in health, nor, indeed, to more than one class of invalids, and it presents the advantage of baths, libraries, shops, riding-schools, fencing rooms, billiards, and other sources of health or recreation.

"To individuals without families, and who are unable to have a permanent conveyance, and to those who resort to the baths for *maladies requiring surgical aid only*, or who merely come to Brighton to escape the turmoil of business, or the thick atmosphere of London, this part of the town is well adapted; but such as have their families with them, and can afford the larger and better built houses of the East and West, should not subject themselves to the disadvantages and annoyances inseparable from a low situation in the centre of a large town.

"The Eastern portion of Brighton is elevated considerably above the sea, and, except when the wind is violent, escapes in a great degree the admixture of saline particles with the atmosphere; not chemically, but mechanically suspended therein. It has a chalky soil, through which the rain immediately percolates, and which permits no moisture to remain on the surface. The houses, too, are of modern erection, and possess many of the comforts and conveniences which have only lately been brought into general use, and the air is decidedly 'bracing.'

"The Western portion, again, (at least, that part of it which abuts on the sea,) has a clayey soil, and a mild and soft climate. The clay has, however, been so largely excavated for building, and for bricks, and the immense lawn in front of the sea is so entirely composed of artificial soil, covering a bed of rounded pebbles, and the country further to the west in the direction of the prevalent winds is so entirely gravel, that it escapes in a great degree the annoyances which the original composition of the soil would have seemed to indicate. *I consider that portion of the western division of the town which is north (and, perhaps, inclusive) of the western road; the upper part of Montpellier Road; extending to the New Vicarage, and the house called the Temple, and round to the Poor House, to be by far the most salubrious portion of the whole town.* There are, indeed, very few, if any, maladies for which the air of Brighton is advisable that will not be more favourably placed here than elsewhere." 29.

DR. W. is convinced that, "*in all cases whatever*, the sea air is more salubrious at the distance of five or six hundred yards from the edge of the water than close to it."

"Those houses in the front line, in the middle portion of the town, which are let into lodgings, are mostly small and ill-built; small low rooms in front; still smaller, close, and dark bed-rooms behind. Of course there are some exceptions. The sun in winter is so cheering and attractive, that visitors are glad to have the most of it, and do not consider some disagreeable collateral circumstances. In summer, *when the sun is high*, there is no reflexion from the water to interrupt the view in a southern aspect, but in winter, *when the sun is low*, it gives nothing but an irritating glare from the surface of the sea, which prevents anything from being seen, and makes it necessary to keep down the blinds till almost sunset. When there is no winter sun, and the weather is misty, the sea presents generally the aspect of a *dull gray wall*, an object anything but agreeable.

"From the middle of July to the middle of October, invalids may locate themselves as close to the water as they please—or on it. At other seasons let them keep at a short distance, and if they have the power to choose, select a house with an eastern aspect. This, by-the-bye, from the structure of the town, will generally be south-eastern; take it altogether, the best 'exposition' of all." 32.

From the middle of March to the middle of May—Dr. W. advises invalids to reside—as far as they please from Brighton. In the above period the heavy fogs in the Channel are floated on the tides to the land, where they adhere too strongly to be floated off again to sea on the ebb. The atmosphere is so unequally heated, that portions, at the distance of a few yards only, will vary five or six degrees in temperature—sometimes double that, especially in calm weather and sheltered localities. Upon these states a bitter cold East wind will often supervene, rendering that part of the coast very objectionable.

"Indeed, in March and April it is no uncommon thing to see an attack of erysipelas from imprudent exposure in what appears splendid weather; and sometimes a severe attack of jaundice, very difficult of cure. Even when the latter does not take place, there is a *tendency to it*, which produces great debility and discomfort. *I know no malady whatever*, NOT EVEN GLANDULAR DISEASE, *which is benefited by sea-air thus early in the season.* Even persons in health come in from a walk or ride unrefreshed, fatigued, and suffering from headache; and the kidneys act in such excess as to give almost the appearance and almost the effect of diabetes. This symptom is, indeed, a frequent effect of sea-air, at all seasons, and, when it does not subside spontaneously, requires attention, or it will defeat every attempt to re-establish vigour." 34.

Our author recommends people who are obliged to reside in Brighton, to stay in-doors till after an early and nutritious dinner, and to burn wood instead of coal—at any rate to let a portion of the fuel be wood, and to keep a clear fire and a strong draught in the chimney, thus escaping the strong gases evolved from the coal, when people are compelled to stay in-doors.

The months of June and July are not only the most delightful period of the year, but that in which the air of the sea at Brighton has the most energetic influence in the cure of disease. The sea-fogs are over—the air has acquired a uniformity of temperature, though not too warm to prevent exercise—the pathways and roads through the corn-fields afford most pleasant rides and walks—the Downs are in perfection—and open vehicles may be had on very moderate terms. The fields, East of the Windmill, overlooking the beautifully wooded village of Preston, is one of the most agreeable spots on all this coast.

"At whatever season, I recommend, that when the wind blows with violence from the sea, the accustomed promenade should be directed towards the country. A quantity of fine sand from the beach, so minutely impalpable as to be almost a fluid, is suspended in the air, and necessarily inhaled: and though it has none but mechanical effects, it is sufficient to produce a sense of oppression and weariness; and to tracheal disease and irritable lungs is obviously injurious.

"Many great towns are partially surrounded by gardeners' grounds or highly cultivated fields. This is remarkably the case in some of the suburbs of London, where a constant succession of fresh manure is used, to force two, three, or even four crops in the year. This animal and vegetable filth, in a state of decomposition, is spread over the land sometimes twice a year, contaminating the atmosphere to a great distance around, and produces extensive disease. It is strange that the public should be so very indifferent to this—that they should inhabit, by choice, houses built in the midst of this sea of putrefaction, when, if an offensive odour arise from a drain or stagnant puddle in the town, they are up in arms to remove the nuisance. I knew and attended in succession five families in a

single row of houses in a locality of this description, which I must not name more specifically. All of these families were ultimately compelled to quit the neighbourhood, from a succession of anomalous ailments and frequent fevers. I believe, indeed, that the fevers so common among farmers and farm-labourers often arise from this cause.

"Now, from all these and similar causes of indisposition, Brighton is entirely exempt. Its supply of vegetables is brought from a distance, and the Downs, with their dry soil and elastic turf, equal to the greensward of a fine lawn—the Downs, which surround the town, furnish the purest and most exhilarating air in the world. Never on the Alps, the Appenines, or the Jura, have I felt so intensely, so *exultingly, the abstract pleasure of mere animal existence*, as on the Downs in the neighbourhood of Brighton. No manure, no decomposition on the surface, because no humidity will remain there,—at such a distance, or such an elevation above the sea, that all which is insalubrious in the air has been deposited before it reaches them. A canter over the Downs in a fine day produces the feelings of the Arab in the desert: the breathing deep and complete, and every air-cell of the lungs fully opened and performing its duty. Eat and drink whatever you please, and as much as you please, if you can take abundant exercise on the Downs. I believe, indeed, that an occasional excess in the pleasures of the table is harmless, and even beneficial, when you have such a rectifier as this. I speak, of course, here chiefly of such as have been suffering from confinement to a town, and insufficient exercise. There are very few of the diseases (not organic) to which such persons are liable that will not yield to this kind of exercise—to fencing and to tennis. *An occasional excess, and an occasional fast, call into action some of the most valuable functions of the stomach left in abeyance by those who practise extreme regularity.*" 40.

Dr. Wigan observes that, according to his experience, "ALL CONGESTIVE DISEASES (with very few exceptions) ARE AGGRAVATED BY A RESIDENCE AT BRIGHTON."

"By 'congestive,' I mean such diseases as are caused or accompanied by local accumulation of blood, principally venous, circulating languidly in any of the organs of the body, and unattended with inflammation.

"It would not be difficult to give a plausible explanation of the above, but I prefer to state the simple fact, (of which my conviction is absolute,) and leave each practitioner to form his own opinion.

"For a long time I lent a very deaf ear to this very disagreeable conviction, but in the end felt it a matter of conscience to send all such persons, not only away from Brighton, but from all influence of sea-air. A man will be rarely wrong in acting boldly on convictions which are decidedly opposed to his own interest: and I rest absolutely and entirely on this." 41.

Inflammatory dyspepsia is another of the ailments for which Brighton is objectionable—and generally in diseases of the kidneys and bladder unattended by *albuminous secretion*, which Dr. W. says, is checked by the air of the place. The localities differ remarkably—some being beneficial—some noxious to disorders. Even that delightful promenade—the chain-pier—he thinks, produces so much mischief in the early part of the year, that the medical men of the town ought to pay for its wear and tear, on account of the practice which it brings them! The sheltered walk, under the cliff which leads to it, affords a safe retreat from the bitter cold north-east winds. The reflected heat from the Cliffs gives quite the feeling of summer—and this shelter and warmth will even extend to half the length of the pier itself. At a certain point, however, you lose the protection of the Cliff, and pass at once, from a warm to a cold climate.

"A very valuable auxiliary in the treatment of disease at Brighton is THE GERMAN SPA; where almost all the celebrated waters of England, of the Continent, and even of America are prepared in absolute perfection by the consummate chemist who superintends the establishment Although, however, some of the cures performed by these waters seem little less than miraculous, I am inclined to attribute a large portion of them to the *early rising*, the *active exercise*, the *abstinence*, the *air of the Downs*, the *entire change of habits*, and, above all, to that *thorough 'cleaning of the internal coats of the stomach*, which accompanies their administration. The combined effect is that of establishing a *completely new sanguification*. That is, it creates a perfectly new mass of healthy blood." 49.

The natural water of Brighton is excellent, and now abundantly supplied by water companies, whose works are situated on the Lewes road. The water filters through several hundred feet of chalk. The well-water in the town, though naturally pure, is too often contaminated by the cesspools. Baths are numerous enough here, and although douches are procurable at all of them, they are very seldom demanded—from the great ignorance respecting it which prevails among the profession in this country. In the following passage we quite agree. It is the doctrine we have been preaching for nearly twenty years.

"On the subject of general bathing, information can be obtained from so many sources that it is quite unnecessary to dwell upon it; but bathing in the open sea by invalids, and especially by young females, requires a great deal of caution. The chance of benefit rarely equals the risk and the mischief done every season by *premature*, *excessive*, or *improper* bathing, is enormous. It is really frightful to see the consequences which sometimes arise in young females from indiscriminate bathing in the sea. Many a case of chlorosis have I seen changed into phthisis by this dangerous practice. No young female ought to bathe in the sea, unless under the clearest medical instructions of a man on the spot. All and more than all the benefits may be obtained by modifications of house bathing, and by resources, which practice and observation have made familiar to medical men." 53.

One of the chief annoyances at Brighton is the extreme violence of the wind—especially when it is Easterly, for then the pungency is beyond expression. This wind is uniformly dry, and has much fine sand suspended in it. "*On such occasions stay at home*, unless you are well enough to resort to fencing, tennis, or such like amusements." (55.) Even the respirator is no safeguard against the fine particles of dust which penetrate readily through its bars and apertures. The complicated structures in the nose resemble not a little the respirator in warming the air, and arresting the influx of sand or dust. When people are obliged to go out in such winds as those described, they should endeavour, as much as possible, to breathe through the nose. In strong exercise, however, they cannot do so, and then the respirator is of some use.

We must now conclude. We have afforded sufficient samples of this little work to prove its utility: and we would advise all invalids going to Brighton to take it with them—and all medical men who are in the habit of sending patients to that place, to look into the pamphlet, lest they injure, instead of benefiting their clients.

Methodus Medendi, or the Description and Treatment of the Principal Diseases incident to the Human Frame. By *Henry M'Cormac*, M.D., Consulting Physician of the Belfast Hospital, and Professor of Medicine in the Royal Belfast Institution. London: Longman & Co. 8vo. pp. 574, 1842.

That Dr. *M'Cormac* is an accomplished medical scholar is abundantly apparent from the character of the present as well as of his former writings. He seems to have made himself acquainted not only with all the current literature of the present age, but also with most of the works of the olden time, from that of the great Father of Medical Science down to the close of last century. How far this elaborate scholarship has subserved his fitness to become an author of a systematic work on practical medicine, we will not venture to determine; but this one thing we may say with confidence, that had he given us less of the opinions of others, and more of the results of his own clinical experience, we fully believe that this present volume would have been much more acceptable to the public, and decidedly more useful to the practising physician. When we first read the title of the work—Methodus Medendi—we had formed to ourselves an idea of a very different work from the present, and had expected to find rather a somewhat original exposition of the general principles of medicine, and more especially of its therapeutic department, than a minute description of its nosological catalogue. It may have been, therefore, partly from this circumstance that the perusal of it has disappointed us a good deal, alike in respect of the subjects that are brought under review, and the manner in which they have been discussed. We had supposed that it might have been similar in its general character to Dr. *Alison's* Outlines, which we introduced to our readers in our last Number, and to the admirable volume which Dr. *Billing* published some years ago. But, instead of this, we have a solid closely-printed volume of nearly 600 pages, commencing with the description of Fever, and—after a history of almost all the ills to which flesh is heir, not even excepting toothache and anaphrodisia—closing with a long account of Mania.

The author has grouped all diseases in the following eight classes:—1. Fevers; 2. Diseases of the respiratory organs; 3. Diseases of the circulatory organs; 4. Diseases of the digestive organs; 5. Diseases of the urinary and genital organs; 6. Diseases of the absorbent system; 7. Diseases of the organs of relation; and 8. Diseases of the nervous system. No classification, we are well aware, will meet all difficulties, or can possibly be exempt from many defects; but we much question whether any arrangement could be more objectionable than the one adopted by our author.

Let us take a few examples:—Cholera is made a fever, while dysentery is a disease of the digestive organs; Scurvy is a disease of the circulatory organs; Hydrophobia is a disease of the absorbent system,—why more so than syphilis? and Anasarca is a disease of the organs of relation! Hydrothorax and Ascites do not appear in the catalogue at all; the one being incidentally introduced under the head of pleuritis, and the latter under

that of what the author calls sero-enteritis. Then we have Chorea described under the head of epilepsy; and Dyspepsia as if it were a mere form of gastritis.

The 7th class is perhaps the most objectionable of all; as it seems to us to comprehend and group together the most dissimilar diseases, while it excludes others which certainly belong to "the organs of relation." Have not erysipelas and urticaria, we may ask, quite as good a title to be ranked among the cutaneous diseases, as eczema or strophulus? and surely that must be a very arbitrary nosological arrangement that places dropsy of the cellular tissue between vermin in the skin on the one hand, and rheumatism and gout on the other. In some instances the classification appears to be not only unwise, but positively erroneous, and calculated to mislead the inexperienced. Not a few cases—perhaps we should rather say, not a few forms—of puerperal fever ought unquestionably to be placed among the Pyrexiæ; and yet all are alike grouped together under one common appellation of metritis or inflammation of the uterus—a term expressive of a most erroneous and hurtful pathological doctrine, if intended to be of universal application.

It appears to us that Dr. *M'Cormac* has erred, in more than one part of his work, by attempting to assimilate and simplify too much various diseases and classes of disease; from his dislike, we should imagine, for the over-minute divisions of many of his predecessors. But then, be it remembered, there is as great an evil in a forced condensation, as in a wearisome amplification, of any subject. Nowhere is our author's mistake in this respect more conspicuous than in the very first chapter of his work; that which treats of Continued Fever. Under the term 'Fever,' he comprehends and describes together the history, symptoms, pathology, and treatment of all the different forms of synochus and typhus—mild, serious, and malignant. The confusion of the narrative, it may be well imagined, is extreme; indeed it is almost impossible for the reader to form any distinct image or picture, if we may so speak, in his mind of what the many-headed Protean monster, that the author is attempting to portray, really is: for its features are ever varying, and withal are so numerous as utterly to defy all attempts at prehension. But let us see what Dr. *M'Cormac* says himself, in order that we may do no manner of injustice to his sentiments. At page 7, it is written:—

"Our knowledge of the pathology of fever is unhappily limited. After describing the complaint, its varieties, complications, and making a few inferences beyond, little remains to be said. We know nothing of the *indoles* of the complaint, or its proximate cause—why it lasts a given period, and then declines. Fever is a disease of the whole system; it affects the solids and the fluids, the organs of digestion, circulation, respiration, and relation; it affects the body, and it affects the mind. It is a disorder with peculiar characters, often propagating itself by a poison, which, not unlike a leaven, sets up a new series of actions in the system. In other respects, individuals are variously affected: in some there is inflammation, in others none; some get better and recover, while others grow worse and die. The intestinal follicles are inflamed in one person, the lungs in another, while the brain is affected in a third. A few perish in whom there is no discoverable lesion, while others gain health and strength in cases where organic derangements have been numerous and severe. As fever pursues its course, there is progressive deterioration of structure and function; yet, for all this, when

the disease is at its height, when destruction seems to impend, it quickly or slowly takes a turn, and all does well." 8.

And again, a little further on, we find our author saying,

"Those writers, who, like Pinel and the Franks, divide fever into numerous varieties, complicate and embarrass the treatment. According to such, we no longer have a given malady, with certain symptoms and complications to deal with, but a number of distinct affections, bearing such epithets as mucous, nervous, putrid, adynamic, ataxic, and typhoid. I would not advocate a simplicity that nature did not sanction; but, assuredly, fever does not present varieties more numerous than most other diseases. From whatever cause the malady may arise, the treatment is mainly alike." 17.

We need scarcely comment upon these passages. With a good deal of shrewd and just remark in them, there are one or two very glaring errors that cannot fail to attract the notice of every reader—witness the concluding paragraph. We had marked several other passages for notice; but perhaps this is unnecessary; as the whole chapter requires a very thorough revision. That Dr. *M'Cormac* is fully competent to write ably on any medical subject to which he directs his attention, we are quite confident; but, to do it justice, he must consent to no inconsiderable labour in arranging under clear and distinctly marked heads the mass of materials which he has collected together.

He is evidently a man of highly cultivated mind, and of liberal and most enlightened views; and withal, we should presume, a sound practical physician. We observe too, that he is a public teacher of his profession. Is it the case that the present volume is made up of the notes or short memoranda used by him as aids to memory in his prelections?—This idea certainly suggested itself to our mind more than once in reading the present volume.

Most systematic works on the practice of medicine open with some prefatory observations on the animal economy; the composition and contexture of its different parts; its active powers in health; the changes to which these are subject from a variety of disturbing influences; its reparative energies, whether spontaneous or promoted by art; and so forth. Dr. *M'Cormac* would not have done amiss, had he followed the good old path of his predecessors, even at the risk of censure as a mere imitator.

If, instead of plunging all at once *in medias res, i. e.* the description of particular diseases, he had given a brief but lucid exposition, in an introductory chapter, of the leading and characteristic features of the various classes of his nosological catalogue, and of the particular states of the system with which these are generally associated—and a right knowledge of this, by-the-bye, is essential to any rational system of therapeutic instruction—he would have saved himself much unnecessary repetition of detail, and his readers not a little embarrassment in following him. In the review of Dr. *Alison's* work, in our last Number, we pointed out the due importance which this excellent author has attached to the morbid changes of the blood as intimately connected with the ætiology of many diseases; and we *then*—as indeed on many former occasions—expressed our own convictions that no truly scientific exposition of the principles and practice of medicine can be given in the present day, without considerable

attention being paid to a Humoral system of pathological doctrine. The recent researches of *Liebig* on the one hand, and of M. *Andral* on the other, have powerfully contributed to direct the inquiries of medical men into this channel. Dr. *M'Cormac* has, indeed, alluded to the subject; but certainly not in the manner, or to the extent, that it deserves. Thus almost all that we are told of the altered condition of the blood in fevers is that "the mass of solids and fluids is diminished; the vitiated blood is imperfectly arterialised, and, from being copious, rich and fluid, becomes poor, serous and dark-coloured;" and again; "the blood, in the course of fever, undergoes certain changes to which the terms watery, dissolved, and putrid have been applied. A living fluid, like the blood, cannot become putrid; but alterations do occur, which exercise much influence on the disease."

We shall now make a few selections upon different topics, in order that our readers may judge for themselves of the general scope and character of the contents of the present work.

Results of Treatment in Fever.

"Were the number of writers and of remedies a criterion, fever should be most amenable; as it is, however, nature is the principal physician. And it is to be feared that the curative measures, hitherto instituted, have not materially lessened the aggregate mortality. The frequency of epidemics removes the disease, in a measure, beyond the pale of treatment, and medical men themselves are carried off in numbers. During the former, however, the aggregate mortality, is great, but the comparative mortality is notably less. Well-concerted measures would lessen, if not do away with these dreadful visitations, but the defective structure of society would go far to neutralize such at present. However this may be, the practitioner is enabled to study individual cases with their complications, and by judiciously adapting the resources of his art, does much as circumstances permit, towards their mitigation and removal. Sydenham has been slavishly followed in his dictum, as to the variety observable in the character, and, therefore, in the treatment of febrile epidemics. The constitution of the air, I suspect, has less to do than the constitution of the patient, and the condition of the community wherein the disease prevails. The same variety is observable during epidemics, as at other times; abdominal affections prevail in Autumn, and pulmonary ones in Spring. In other respects, typhus is commonly less frequent in Summer than Winter." 16.

Dr. *M'Cormac* is, we think, quite in error, when he under-rates the importance of what the English Hippocrates called the constitution of the air or season, in reference to the mildness or gravity of different epidemics. The experience of every year amply confirms the perfect truth and practical value of the old physician's views on this subject.

Influence of the Mind on Agues.

"Intermittents, it appears, are sometimes removed by mental impressions. The prince of Saxe-Weimar experienced quotidian at mid-day, which resisted every mode of treatment. Hufeland, his physician, put the clock two hours forward, and the overjoyed patient, believing himself cured, became so in reality. Charms and secret nostrums have proved not altogether impotent: most have heard of Judge Holt and his ball. The fear of a tempest has checked an accession of ague; and a friend of mine recovered instantly on learning that his ship was on fire. Stokes mentions, that the fits often failed to ensue, when patients were directed to be bled in their hearing. Pliny tells of a captain whom

an engagement released; and Joseph Frank, of a soldier who was frightened into the disorder by one battle, and out of it by another. An attack has taken place when the patient anticipated the customary hour; thus, Riverius relates the case of a man, who having gone out to ride, heard a steeple chime an hour more than it really was, whereupon, back came his ague on the spot." 34.

The energy of a resolute mind will certainly often go a great way in checking the return of intermittent attacks; and, on the other hand, fear, despondency, and worrying anxiety, will inevitably cause them to take a stronger hold and a deeper root in the constitution. Colonel *Napier*, or some other historian of the Peninsular War, mentions an anecdote of the *Duke of Wellington*, that bears upon this point. It is well known that the great chief himself never left the Peninsula—from the time of the British troops landing on the coast of Portugal, in 1809, till they triumphantly planted their standards on the French soil in 1814—although there was scarcely an officer of high rank in his army who had not been obliged by sickness to obtain furlough of leave. The *Duke* had repeated threatenings of ague attacks; and how did he treat them? Just before the expected fit, he would take a draught of laudanum and æther, mount his horse, and ride at full speed for a couple of hours, until he was in a state of free perspiration.

Dr. *Billing*, if we remember aright, has very happily pointed out, in his clever work on the Principles of Medicine, the points of analogy between ague and neuralgia.* Some of these will naturally occur to every medical reader; but perhaps none is more convincing than the marked influence of the mind on the progress of both diseases.

Treatment of Hooping-cough.

The account given by the author is certainly very unsatisfactory. As a matter of course, he like every other physician, inculcates the necessity of antiphlogistic measures in the early stage, when there is usually some bronchitic or pneumonic tendency existing. The treatment at this period of the disease is abundantly obvious and simple. It is when the fits of coughing remain frequent and severe, all the inflammatory symptoms having quite passed away, that the chief difficulty is experienced.

What is best to be done, then? According to our author, little good is to be expected from medicine. Change of air, attention to the state of the bowels and skin, and an occasional emetic, seem to him to be the chief means of relief. He has tried, he tells us, prussic acid, belladonna, and other antispasmodics; but has never found them to have any decided effect in allaying the attacks, or in shortening the duration of the disease. He does not even allude to the use of the alkalies, a very safe and often a most important class of remedies;† nor to that of tonics, such as quinine, the salts of iron, zinc, &c. although these are often of

* Some remarks on this subject from the pen of M. *Piorry*, one of the physicians of La Pitié Hospital in Paris, will be found in the Foreign Periscope of the present number.

† In our own practice we are partial to a mixture of nitrate of potash, or of the sub-borate of soda, with hydrocyanic acid, compound camphor tincture,

unquestionable advantage, especially when combined with conium, or some other of the milder sedatives.

Dyspepsia.

We select the following passage as a very fair, and withal a favourable, specimen of our author's style and mode of treating his theme—short, pithy, and expressive. The general tone of the remarks reminds us much of the introductory chapter to the well-known "Change of Air," by the Senior Editor of this Journal—a book, by-the-bye, which we should very cordially recommend to most dyspeptic patients.

"It is plain, from the importance attached to purgatives, that the majority of writers have looked on them as the essential; exercise in the saddle, however, or on foot, morning frictions and the shower-bath, with a plain restricted regimen, will do more good than all the purgatives in the world, useful though they be, without these means. Walking, progressively increasing the amount, is one of the best restoratives imaginable; it is even superior to horse exercise, so much and so justly lauded by our English Hippocrates. Muffling, in the shape of flannel next the skin, is better than a great coat; and with a stout frock, a stick, and, if possible, a cheerful companion, were it only a dog, let the patient sally forth—if over a rugged unequal surface, so much the better. Languor will at first ensue, but, as this goes off, an exhilarating glow pervades the frame, ending in cheerfulness, craving appetite, and, if properly persevered in, complete renovation of all the excretions. I sometimes advise a patient to walk one day and ride the next; indeed, passive exercise is often useful. It may happen that entire change of scene and occupation is desirable; the greater, the more effectual. In 1821, a student harassed with dissections at La Pitié, clinique at the Hôtel Dieu, and midnight study, lost all desire for food; his colour grew bad, his spirits languished, and the bowels became obstinately constipated. In this state he drove off, *summa diligenta*, to Brussels, where he wandered about the environs and ate spring fruit without reserve, but of other medicine none; in a fortnight's time, no trace of indisposition remained. The dyspeptic labourer only requires better food, the dyspeptic artisan better food and air. If the poor tiller of the soil could but subsist on the fat of the earth, and the rich sybarite be reduced to hard fare and assiduous toil, it would equally benefit both. The literary dyspeptic should live more *sub dio—melior est ambulatio sub divo, quam in porticu*, quoth Celsus. A man's mind was not intended to be a mere receptacle for book lore—a literary sieve; the body must be cultivated likewise. Let study be followed in the morning, at night never; and let four or six hours daily be spent in the open air. The student's motto should be σπεῦδε βραδέως, *festina lente*—the *ohne Hast aber ohne Rast* of the illustrious Göthe; thus, as life wore away, his mental would increase without prejudice to his corporeal powers." 247.

Remarks on Sterility.

We were much struck with an observation made in the late official report, by the Poor-law Commissioners, on the Sanitary Condition of the Labouring Population in Great Britain—of which a pretty full analysis is given in our last Number—that, so far from the great mortality in large

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ipecacuan wine, and dill water. In a great number of cases, it has proved of singular efficacy. If the child be very weakly, the decoction of bark may be the vehicle, or small doses of quinine may be given at the same time.

towns proving a check to the increase of population, it is found that the proportion of births to the number of inhabitants is actually higher there than in rural districts, where the comparative number of deaths is much smaller. "In Manchester," we are told, "where one twenty-eighth of the whole population is annually swept away, the births registered amount to one in 26 of the population; while in the county of Rutland, where the proportion of deaths is one in 52 of the population, the proportion of births is only one to 33."

Mr. Chadwick subsequently proves, by the results of last year's registration, that "there has been an increase of the population from births alone in those parts of the country where the proportionate mortality is greatest."

The following remarks, by Dr. *M'Cormac*, will be read with interest in connexion with these rather unlooked-for-results.

"It is remarkable," he says, "that habitual excess in eating and drinking proves adverse to fertility; and such, I take it, is the principal source of the sterility of the rich; this has even been observed in the inferior animals. Habitual plethora seems to indispose to fruitfulness; while poor people, with a bare sufficiency, if even that, have houses swarming with offspring. The prolific tendencies of the Irish are well-known: barren marriages are rare among them. Fish-eaters, icthiophagi, who have to work hard, and live without excess, are proverbially fruitful. Hence it is that the reproductive tendencies of a people—a problem vainly attempted by Malthus and others, is in the inverse ratio of their comforts, and not merely of their numbers, as conjectured by Sadler. Hence, also, the poorer and more wretched a population, within certain limits, the more prone to increase. In other respects, the poor follow, but do not precede the promptings of nature. The rapidity with which the void left by famine, war, and epidemics, fills up, has been frequent matter of observation, and is readily enough explained by the increased facilities of subsistence and consequent inducements to marriage among survivors. In two or three instances, by enjoining separate apartments for a time, simple sparing regimen, the shower-bath, and exercise in the open air, I have reason to believe that the wishes of parents, previously childless, were successfully promoted." 350.

With another extract, and it is a valuable one, we shall close our notice of the present volume.

Connexion between the Functions of the Skin and the Urinary Organs.

"The emunctory for carbon in the human body is the lungs—for azote, merged in uric acid, the kidneys—occasionally, as in gouty subjects, the joints. The occasional conjunction of gout, uric acid, gravel, and stone, is notorious. How far the functions of the kidneys and skin are convertible in this matter, is difficult to say; but, certain it is, that those who maintain due cutaneous transpiration, are much less liable to lithic acid deposits. In connexion with this subject, I may advert to an interesting observation of Wilson Philip, that accescent food, ordinarily productive of a lithic acid deposit, had no such influence when due action of the skin was maintained by diaphoretics. It is obvious, that excess of azote is consumed in muscular nutrition, a process greatly enhanced by exercise. Sailors, soldiers, labourers, huntsmen, pedestrians—the Esquimaux live on it exclusively, consume azotized food without sustaining inconvenience, but the case is far otherwise with the indolent and replete. Many such, as I have observed, habitually void urine surcharged with uric acid. Indeed, I know those who never discharge clear urine except when they grow

ill, and when they become unable to continue their wonted excess. Brodie mentions a gentlemen, who, though he lived freely, sweated himself by morning exercise; this interrupted, his urine began to display red gravel, his skin a scaly eruption. Majendie tells us of a merchant of the Hanse Towns who discharged uric acid gravel while his business was prosperous, becoming clear when it declined; and conversely, returned to its old condition when his affairs rallied. But the majority, if they will take the trouble, may observe these alternations in themselves or others." 322.

When we next meet Dr. *M'Cormac* as an author, we trust that we may have it in our power to bestow more unqualified praise on his work. His is not a character to submit to the tedious drudgery required in compiling a systematic Treatise on Medicine; it is too brisk, off-hand, and impatient. His talent, we should say, is for clever animated monographs.

I. MEMOIRE SUR L'ANATOMIE PATHOLOGIQUE DES RETRECISSEMENS DE L'URETRE. Par le Dr. *Civiale.* 1842.

Essay upon the Pathological Anatomy of Stricture of the Urethra.

II. MEMOIRE SUR L'EMPLOI DES CAUSTIQUE DANS QUELQUES MALADIES DE L'URETRE. Par le Dr. *Civiale.* 1842.

Essay upon the Employment of Caustic in some Affections of the Urethra.

THESE pamphlets may be regarded as appendices to Dr. Civiale's large work upon the Diseases of the Genito-urinary Organs, and, as we have so recently furnished a copious analysis* of that excellent production, we will content ourselves with a very brief view of the present Essays, and the more readily, because, short as they are, they contain many repetitions of what we have already brought under our readers' notice, in the numbers referred to.

I. PATHOLOGICAL ANATOMY OF STRICTURE OF THE URETHRA.

Since the publication of his work, Dr. Civiale has visited our metropolis, and subjected the numerous pathological collections it contains to a minute inspection. He has here found ample confirmation and illustration of the doctrines and precepts that he had published, and takes frequent occasion to remark upon the richness of our museums in valuable specimens of every variety of urethral disease. This, however, is not to be looked upon in the light of a compliment, but the reverse, as he believes

* See Medico-Chir. Rev. for July and October, 1842.

much of our pathological wealth has arisen from our faulty practice. Thus, speaking of false passages, he thus expresses himself—

"When I visited the rich collections of London, I was struck with the prodigious number of preparations, shewing every variety of false passage. I communicated to one of the first surgeons of that city, who accompanied me, the reflections so frightful a collection gave rise to. 'You need not be surprised,' he replied, 'to find here a greater number of examples of false passage than elsewhere, for it arises solely from the greater care with which we preserve the preparations of the accident: the number of such cases that occur is pretty much the same in all parts.' So far from partaking this opinion of my London *confrere*, I am, on the contrary, persuaded that the principal cause of such multiplicity is the manner in which catheterism is performed, and the hazardous means which are had recourse to in order to force the stricture. In no place have such means so extensively prevailed as in London, and in no place has less attention been paid to the practice of catheterism —an operation often confided to the assistants. To understand how this department of surgery has been neglected by the English, it is sufficient to look at the curvatures of their instruments, for with such it must be difficult if not impossible to avoid making false passages."

The author considers that the curve of the instrument should be much slighter and more prolonged.

Protesting altogether against the accuracy of the criticism upon the manner in which catheterism is usually conducted in this country, we are inclined to believe there is more truth in the explanation offered by the London Surgeon than Dr. Civiale is disposed to admit. Judging from the falsification of facts as to the result of cases, and the manner in which post mortem examinations are made to furnish the desired confirmations, on the Continent, we should feel little expectation of finding there the same manly candour which prevails in our own country, in avowing, and exhibiting for the warning of others, the results of unsuccessful practice. Moreover, when we remember the praiseworthy zeal and indefatigable industry with which the directors of our museums search out for illustrative examples, it is nowise surprising that they should have accumulated a great number. We consider it no reproach to possess such collections, but we regret to record our conviction, that, rich as they are in every variety of anatomical and pathological illustration, got together with great industry, maintained in the most perfect order at great expense, and thrown open to all inquirers with the greatest liberality—they are far too little frequented both by students and practitioners. Our author, by reason of the unrivalled dexterity his long practice and great opportunities have given him, possesses the right of criticism in a full degree, but we can assure him, that, although there may be some truth in his remarks upon the curvature of our catheters, &c., yet, that they are by no means the formidable instruments which he seems to suppose, and that the production of false passage by their employment, is of rare occurrence, in the hands of a careful surgeon, (M. Civiale himself acknowledges this is frequently unavoidable even under the most skilful management,) while the practice of forcing strictures, save in some great emergency, never has been admitted as legitimate practice. Of course the urethra has its quacks, licensed and unlicensed, as every other organ of the body has, but our author's work amply shews that such, bearing no mean names, exist also in his own country. To proceed with our brief analysis:

Several circumstances conspire to prevent pathological anatomy throwing all the light that can be desired upon stricture. In many patients, who have fallen victims to the immediate consequences of stricture, the nature of these has never been examined, and it is only quite recently that attention has been directed to them. "The pathological facts, too, collected in many localities, especially England, have been turned to little account. It is not without surprise that I have seen in the London museums great numbers of documents lost as it were to science." Although the greater number of fatal diseases of the bladder are the direct or indirect consequence of stricture, yet, owing to the gravity of these secondary lesions, they absorb all the attention of the practitioner, and the state of the urethra, especially as the patient is frequently enabled still to urine, is overlooked. After death, too, the narrowing of the canal is frequently not found to be proportionate to the difficulty experienced in passing instruments during life. Again, on examining the urethra, one is often surprised to find so inconsiderable a lesion of a surface, which may have abundantly secreted puriform matter for years, and to which repeated applications of caustic have perhaps been made. Lastly, it is not so often in the actually strictured part itself, as at a point posterior, and sometimes anterior to it, that organic changes are to be found: for the narrowed and dense part has remained untouched, while the urethral pouches between it and the bladder have had to bear all the impulse produced by the endeavors to evacuate the latter organ, and those anterior to the stricture have been submitted to the application of instruments.

The *Lesions constituting the Stricture* having been so recently described in the article alluded to, we may pass on to the section treating of *Organic Lesions resulting from Stricture.* In estimating these, we must bear in mind that two very different conditions of the bladder may exist in persons afflicted with this malady. Sometimes its walls are hypertrophied, and possess a great expulsive power, while, in other cases, they are often in a condition of atrophy, when the organ possesses less than its natural power of contracting upon its contents. As the altered condition of the parietes of the urethra, situated posteriorly to the stricture, is chiefly produced by the impulse of the column of urine, it is easy to see that the extent to which this takes place will be much influenced by the condition of the bladder. The principal effects produced are, (1,) *Phlegmasia* of the mucous membrane of the *urethra* posterior to the stricture. The discharges so often found in stricture proceed from this locality rather than from the strictured portion of the canal itself, or from the tumified condition of the prostate, and it is here too that the morbid sensibility of the canal is especially found. Indeed, the inflammatory condition of the membrane, which preceded the formation of the stricture, seems to recede afterwards to a point posterior to it. Here it may be followed by the usual sequelæ, as softening, ulceration, partial destruction. Sometimes the urethra is pierced like a sieve, giving rise to several urinary fistulæ, but, in most cases, a solitary perforation exists. (2.) *Abscesses*, situated in the substance of the urethral parietes, may follow the destruction of its lining membrane. (3.) The *dilatation* of the urethra, behind the stricture, varies much in size, and sometimes becomes so large as to be mistaken for the bladder itself. Great dilatation of the mucous follicles, seated near the neck of the

bladder, and of the orifices of the spermatic and prostate ducts likewise occur, and that more frequently and extensively than is usually imagined. (4.) The partial destruction of the mucous membrane also often leads to the formation of small sacculi in the urethra, especially at the inferior and lateral parietes of its membranous portion. (5.) *Ruptures and lacerations*, sometimes occurring spontaneously in the membranous portion, are usually preceded by inflammatory action. (6.) Changes not infrequently occur in the portion of the canal *anterior to* the *stricture*, especially near the glans, arising from the sympathy of continuity of structure. (7.) *Lesions of the prostate*, whether effects or mere coincidents, are very frequent accompaniments, and exert a powerful effect in increasing the gravity of the malady, and the difficulty of relieving it. We will not follow our author in his detail of the varieties of these, as his observations form but a condensed repetition of what he has stated at large in his former work; but we may remark, judging from the detailed and somewhat elementary character of the demonstrations he lays so much stress upon, as not generally understood by his readers, that the nature of these changes, the obstacles they present, and the means by which they are to be overcome, must be far more familiar to our practitioners than they are to their brethren on the Continent—a result due, no doubt, to the admirable series of preparations illustrative of these points which most of our schools possess. (8.) *Lesions of the Bladder.* These vary according as the walls become hypertrophied or the contrary, and whether catarrh may have co-existed for a greater or less time. (9.) *Of the Ureters.* These are usually irregularly dilated, and their parietes, though not often thickened, are reddened. (10.) *The Kidneys.* Most patients who die in consequence of stricture do so from the kidneys having become implicated.

False Passage.—The author observes that, when we consider the extent, situation, and direction of strictures, the deviations the canal behind them undergoes, the form and size of the instruments employed, the various special modes of treatment had recourse to, and the want of experience of many of those who endeavour to treat the affection,—we should rather feel astonished that so few examples of false passage exist than at their abundance.

Although it may occur in the anterior portion of the urethra, it generally takes place, where the mobile joins the fixed portion, just under the arch of the pubes. Usually it is the inferior wall of the urethra that is perforated, and, when the accident has occurred to the upper, it has generally arisen from lowering the handle of the instrument too soon, so that its point is thrust against the upper portion of the wall of the urethra. But even when the instrument has passed this point safely, the precise time when, in cases of bad stricture, its point deviates from the passage is by no means so easily distinguished as books would lead us to suppose; for, the supposed sensation imparted to the hand of the surgeon, or felt by the patient, the occurrence of hæmorrhage, or the change of direction the handle of the instrument undergoes, often afford little or no information, and in spite of every precaution, the most skilful practitioner will sometimes commit the fault of inducing false passage. His difficulty becomes very great when he is called in to examine a case, in which the false passage has

perhaps been recently effected by others, for he will now run great risk of becoming saddled with the malpraxis of his predecessor.

II. EMPLOYMENT OF CAUSTIC.

It would seem, from the observations of the author, that the practice of treating stricture by caustic, once so much in vogue and now so generally abandoned in Britain, is still recommended by practitioners of repute in Paris, in spite of the little success which has attended it. He gives a brief historical sketch of the various means which have been employed to bring the caustic substance in contact with the stricture, many of which quite fail in this object, and others pre-suppose a degree of perviousness of the strictured part, which should render the use of caustic unnecessary. When M. Civiale has had occasion to use this substance, he has usually succeeded by a modification of some of the old procedures, rather than by the adoption of any of these complicated apparatus. He selects a wax bougie of a size suited to the stricture, and rolls an inch of its extremity in powdered nitrate silver, wiping off with a piece of rag any of the caustic which may not have become blended with the wax. This, protected by a canula, is passed down to the stricture, and the requisite extent of the armed point is glided as far within it as a previous examination with bougies has proved to be practicable or desirable. This is the best mode when as is occasionally useful, it is desired to cauterize an extensive and indurated surface of stricture, which has resisted dilatation, and whose low degree of vitality may call for stimulation. It is also useful in some of the gleety discharges which have their seat in the deep portion of the urethra, or at the neck of the bladder. Each application should continue but a minute or two, and the same bougie will serve for more than once.

Among the advocates for caustic there is a discrepancy of opinion as to the nature of the action or effects which it produces. Most consider it rather as a means of modifying the vital action of the canal preparatory to dilatation, than of directly destroying the obstacle. Others look upon the caustic as operating a true destruction of the stricture, and consider all subsequent dilatation as useless or injurious. The latter restrict its use to linear stricture, and consider that when the affection is extensive it is contra-indicated. Some apply it in the slightest manner, while others continue it for five minutes or more. Some recommend we should not have recourse to it until the situation, extent, direction, and number of the strictures have been carefully ascertained, while others think these preliminaries are useless, and if there are several strictures, attack them simultaneously if possible. Some, too, unless a favourable result at once follow the application, refrain from repeating it, but, others, let the result be what it will, continue the applications even to *hundreds of times*. Practically we should be guided by the nature of the stricture, in deciding whether caustic is applicable, and the author is of opinion that its use can be extended to a very limited number of cases, while, applied as it is at present, in France, it leads to much injury. In the simple bridle (1) occupying only a portion of the circumference of the urethra, a slight application of caustic is often followed by as slight a re-action, and the affection

is forthwith relieved, or a large bougie may at once be passed. (2.) Even when the case is more advanced, and the stricture has acquired some consistence, one, two, or even three very light, short, and sufficiently interrupted applications are sometimes attended with beneficial results. (3.(When a stricture is very considerable far less amendment usually follows a first application, and still less and less each subsequent one, and if, in spite of this, the practice be persisted in, the case becomes aggravated and far more serious. In cases (4.) wherein the stricture, situated at the anterior part of the canal, is sufficiently considerable to prevent the application of caustic to any of those which may be situated behind it, yet these latter often become benefited to a considerable degree by applying the caustic to merely the anterior stricture, and, therefore, without having themselves come in contact with the substance used. This, among other things, proves that the caustic cannot act by its mere power of destroying the tissues it touches. Its escharotic effect has, indeed, been far too readily assumed, for, if, as has been said, each application is followed by a loss of substance, the one or two hundred cauterizations, performed by some practitioners, should destroy even the parietes of the urethra as well as the mucous membrane, which lines them. As the essential cause of the stricture does not arise from an accidental production, developed upon the surface of the mucous membrane, capable of removal by an escharotic, but from a change in the organization of those parts which the mucous membrane covers, to influence this directly by caustic it would be requisite that such covering should be destroyed. But when the mucous membrane has become partially removed, from any cause, various serious accidents, as infiltration, fistulæ, &c. have resulted. Post-mortem examinations show that the application of caustic leaves no traces upon the surface. The part touched becomes reddened and puffed, and in a few days detaches a grayish pellicle—a modification of the sensibility of the part and an increased capillary circulation occurring for the time. When the caustic produces more violent effects, it has been too freely applied, and is hurtful. In most cases, when the application has been properly conducted, the pain is insignificant, and, indeed, in many cases, either from the nature of the means employed, or from the quantity of discharges existing in the canal, it is doubtful whether the substance comes into contact with the stricture at all.

The author is disposed to almost confine the use of caustic to the case of simple bridle, for, if in more serious and extensive stricture, a temporary amendment results, it is usually followed by an aggravation of all the symptoms, sooner or later; and, besides the danger of inducing false passage and undue inflammatory action, its frequent use is followed by a thickening of and loss of elasticity of the walls of the urethra, so that the difficulty of urining continues, although perhaps the urethra may be sufficiently capacious to admit a large instrument. Indurations of a greater or less extent, a gleety discharge of obstinate continuance, severe pains in the region of the neck of the bladder and vesiculæ seminales, and loss of virile power are other consequences too frequently observed. Dr. Civiale severely criticizes M. Lallemand, who, formerly a frequent practiser of cauterising, as the grand means of cure of stricture, has not, now he has found reason to modify his practice, made his change of opinion sufficiently known; so that many practitioners still follow, upon his authority, a prac-

tice which he himself has much modified. The author also notices, to blame, the practice of indiscriminately applying caustic, whether in solid form or strong solution, to the neck of the bladder in cases of blennorrhagia.

Both the Pamphlets are amply illustrated by short details of cases an references to preparations in the London Museums; and, in respect to the use of caustic, the author declares that he is constantly consulted by persons, who, temporarily relieved by other practitioners by this means, after a few months, have found themselves suffering under a new and aggravated train of symptoms, induced by the injury done to the urethra; whose cases have been rendered infinitely worse, and whose complete cure has become hopeless.

PRACTICAL OBSERVATIONS ON MIDWIFERY; with Cases in Illustration. By *John Ramsbotham*, M. D., &c. &c. Second Edition, revised, in one volume. London, Highley; Churchill. 8vo. pp. 500.

THIS is an excellent work, and well deserves a place in the first rank of practical treatises on the obstetric art.

Among its excellencies—and this is no mean praise—is that it is written in a good style. It is pleasing to read; neither repelling us by diffuseness or tediousness, as is the case with certain other books on midwifery which we could name; nor ever admitting of our laying down the book dissatisfied with what we may have read, as an insufficient development of the subject. It is characterised throughout by the eloquence of simplicity and plain good sense, and it has the inestimable merit of *keeping perpetually to the point*. Midwifery, indeed, when confined within its proper sphere, is essentially a practical art, involving the consideration of little that is hypothetical, or that gives cause for the excursions of fancy; so that discussions on the complicated questions of embryology and other cognate sciences are with justice excluded from a book, the reader of which takes it up solely with the view of deriving guidance in a branch of medical practice on manipulation. The accoucheur, or the midwife is not called upon, like the physiological professor, to indulge in speculations as to the exciting cause of menstruation, the recondite processes of development in the ovum, &c. A clear head, a cool judgment, and a firm purpose, accompanied by an adequate knowledge of the condition of the uterine contents in the later periods of gestation, are—rather than a mind ingeniously fitted for the elucidation of subtile inquiries—the qualities eminently called for in the midwifery-practitioner. A happy method of laying the several heads of obstetric practice before his reader, and the peculiar tact for seizing on the most appropriate cases to illustrate these several heads, will always be the chief, if not the only, literary virtues which the writer on midwifery need aspire to claim. These qualities display

themselves conspicuously in the work of Dr. Ramsbotham; and it will, accordingly, constitute in this place our main duty to extract from the treatise before us such passages as exhibit most clearly these distinctive characters.

In a few places, and these are very few indeed—Dr. Ramsbotham has stepped out of the path which he had assigned to himself, into the domain of general anatomy. The opinions of a man like Dr. Ramsbotham, will ever be entitled to respect; but we must say, that in some of these discursive wanderings, he has expressed some, in which, in common with the greater number of physiologists, we may hesitate to concur.

Take, for instance, the passage where, in speaking of the structure of the uterus, he says:—

"Let this viscus be examined with an impartial eye, with an unbiassed mind, either under gravity or unimpregnated, and its muscularity, in the proper sense of the term, must be, I think, with difficulty admitted. * * * Muscular structure consists in a congeries or bundle of fleshy fibres, or filaments, connected together by cellular membrane, and appropriated to motion or action, voluntary or involuntary. Now, if this definition of muscularity be correct, any structure, which does not accord with it in some degree, must be other than muscular. Is there, I would beg to ask, any distinct set, or are there any distinct sets of muscular fibres connnected by cellular membrane severally perceptible throughout the whole or any part of the uterine parietes? Or is such a distribution of muscular structure evidently visible in its composition, as appears capable of producing effects equal to those of uterine contraction under the active state of labour? Does the human body offer any instance of muscular structure being for such length of time perfectly quiescent; of its assuming, and acquiring a degree of growth and evolution similar to that of the uterus under a state of impregnation; and, after the performance of certain actions, resuming its pristine state, and appearance without any obvious alteration? If satisfactory answers cannot be given in the affirmative to questions like these, the uterine structure ought not, in my opinion, to be called or considered muscular." 4–5.

We think we need scarcely afford any more space to the combating this opinion, than such as is required by the following subsequent admission of our author himself, which appears to us difficult to square with the opinion he had previously broached.

"That the uterus under a state of gravidity, does possess strong powers of action, by which its parietes are reduced within a smaller bulk, and by which the capacity of its cavity is diminished to an extent unequalled by any other organ of the human body, is a fact too obvious to be denied." 5.

We have yet to learn that active contractile powers—"strong powers of action," in the decided language of Dr. Ramsbotham—are resident in any other than muscular tissue. But we refer our readers to the whole section on the uterine structure, (p. 367) for the arguments *pro* and *con*; and we are inclined to think that, after having given it consideration, more of our professional brethren will be disposed with us to dissent from than to agree with Dr. Ramsbotham on this particular subject.

After some useful introductory observations upon the contents of the gravid uterus, and the symptoms of approaching labour, our author enters upon the full consideration of this process; and from this part of his

work we extract a few lines, the maxims conveyed in which ought to be ever present to the mind of the medical attendant in the lying-in chamber.

"Throughout the course and management of a common natural labour, the assistance of the accoucheur is seldom wanted till the expulsion of the child is at hand: he has merely to superintend the process; to take care that all the natural changes are duly and timely performed; and to provide against any avoidable injury which neglect might occasion. By untimely and officious interference, the whole process is frequently thrown into derangement and confusion; the use of instrumental means, is thus called for towards its close, to ensure the welfare of the mother: whereas, in all probability, had a different line of conduct been pursued, a natural and safe termination would have resulted." 25.

In his section on the general management of the placenta, Dr. Ramsbotham inculcates the following judicious method of proceeding, and points out the inferences which it is the means of establishing.

"After the separation of the child, the hand of the accoucheur must always be applied upon the lower part of the abdomen, with the intention of ascertaining the actual condition of the uterus, and the degree of contraction it has already undergone; for every other consideration is now of minor importance in comparison with that of uterine contraction. This simple proceeding ought never to be omitted: it enables us to judge of the probable safety of our patient, and to give those satisfactory assurances which ever prove so pleasing: it warns us of threatened mischief, and empowers us to take timely steps to avert it: it is also the surest means of detecting the presence of a second child. By the state in which the uterine tumour is now found under the hand must the practice be regulated. * * * * If the uterus be now found low in the abdomen, or in the pelvis; if it be firm, well contracted, and small in bulk, the safety of the woman is pretty well assured. If, on the contrary, the uterus remain high, if it be flaccid, ill-contracted, and large in size, without the presence of a second child, some threatening of mischief attaches to such symptoms, of which the accoucheur is forewarned." 27–30.

With respect to the *period of time* which may be suffered to elapse before the placenta, if retained, should be withdrawn artificially, our author makes observations which are as remarkable for the sound judgment that has dictated them, as they are characteristic of having been the result of grave and protracted deliberation, and a careful weighing of all the circumstances capable of producing retention of the placenta.

"Though the placenta may be withdrawn at pleasure, it may be a question of policy, whether it ought to be withdrawn *immediately*.
* * * "But let us suppose that the placenta still remains entirely within the uterine cavity; that there is no tendency to a return of uterine action; that the uterine tumour continues high, large, and flaccid; what length of time are we justly authorized to wait before some decided steps should be taken for its removal out of the uterus? * * * I am ready to acknowledge that there is great difficulty in fixing the precise time for acting. On this important point, the accoucheur must rather be guided by the respective circumstances of the case, as they arise; by the general state of the patient; by the feel of the uterine tumour; by the quantity of sanguineous discharge, and its effects; and by the nature and length of the preceding labour, than by simple attention to lapse of time.

"It will rarely be necessary to exceed two hours before recourse should be had to this proceeding: more frequently its necessity will be obvious before the expiration of this time; indeed, I think, on an average of cases, it will be found that, if the placenta be not thrown off by natural means within one hour from the birth of the child, it is detained by some unusual cause. If hæmorrhage or other pressing symptoms should suddenly intervene, an earlier removal will be required; otherwise everything like hurry or haste ought carefully to be avoided." 31-37.

We must not allow ourselves to mutilate the admirable chapter on adhesion of the placenta, (pp. 47-74,) which we, therefore, reluctantly pass over without extract or comment. But we most cordially concur with Dr. Dewees, the editor of the American edition of this work, that the whole of this chapter "shows a master-hand:" and, indeed, we should be inclined to point to it as *one* of the best—if not eminently the best—of the divisions of the work.

Dr. Ramsbotham has before justly deprecated any attempt to interfere with the progress of natural labour; and he reiterates his caution and his protest in treating of cases in which the process of parturition is being performed in a normal, although protracted manner. Thus, he says—

"Any attempts to hasten the labour by forcing the pains, by irritating the os-uteri, by injudiciously rupturing the membranes, by forcibly dilating the external parts or vagina, or by other artifices, under the specious pretence of doing something for the benefit of the patient, are equally reprehensible and injurious. And here I must beg to remark, that I cannot give my sanction to those experimental applications of active substances to the os-uteri, with the view of producing its relaxation, which are made and recommended to be made even by men of experience. * * *

"It appears to me, that labour-pains (properly so called) do form, and were intended by the Great Author of Nature, for the wisest purposes, to form a constituent part of the act of child-birth; that they are inseparably attached to it as a cause; that they are merely an external evidence of the presence and progress of those powers by which the process is finally to be terminated, but without a due degree of activity in which it must be prolonged; and that they ought not, generally speaking, or on the application of a general principle, to be counteracted. I am certain that they ought not to be entirely suspended: I have my doubts whether, except in very rare instances, any attempt should even be made to palliate them. Pain is certainly an evil, and is universally deprecated as an evil; it seems always highly desirable to get rid of it as soon as we can; but labour-pain is established to bring about the happiest results. It is, then, one of those necessary evils to which we must patiently submit, within reasonable bounds." 127-129.

And as respects the injudicious, but too frequent employment of opiates besides the degree of benefit which may be legitimately derived from this remedy, he adds—

"The injurious effects of opiates are not simply confined to the retardation or disturbance of labour previous to the expulsion of the child; they are continued to, and exerted upon, that uterine power, by which the placenta ought to be separated and excluded; in default of which it is detained within the uterus, and thus flooding and other mischiefs ensue, from the same source. * * *

"When uterine action has been prematurely and violently established, a little relief has sometimes been procured by repeated small doses at short intervals;

after which the labour has proceeded more favourably. But when a truce is thus obtained, their use should be discontinued." 130-131.

Our limits oblige us to pass with very brief notice over the chapters devoted to Preternatural Labour and Uterine Hæmorrhage. But one passage we find it impossible to omit extracting. The moral principles which are here and elsewhere enforced are so correct that, in deciding upon the weighty and jurisprudential questions which arise under the management of difficult cases, we cannot adopt a safer guide to our determinations than the author before us. Thus, on the subject of cephalotomy, we find it remarked—

"A dreadful degree of responsibility attaches to the accoucheur in every instance of perforation of the head. The operation can never be a matter of choice: it is one of imperious necessity, to which he is impelled, with whatever reluctance, by the strictest sense of professional duty. If the child be alive when the head is perforated, its life is certainly destroyed, and infanticide is committed; yet, for the reason just stated, viz. that the act is not a matter of choice but of necessity to save the mother, it is a justifiable act, and ceases to be a criminal one. Should we even possess satisfactory proof that the child is dead in utero, as, for instance, under a case of simple, but lingering labour, with the funis below the head, devoid of pulsation; though no violence would be offered to the child by the perforation of the head, we ought to abstain from an unnecessary resort to it, even for the sake of appearances alone. But if, in such case, the labour should become protracted, rather than allow the mother to run any risk under the efforts of natural expulsion, I would not hesitate to lessen the head, especially if there existed the least relative disproportion." 177.

No moralist can cavil at this!

The following remarks, also, which chiefly relate to the practice when hæmorrhage occurs from implantation of the placenta over the os-uteri, deserve to be inserted here entire.

"Let me offer an urgent caution against a mode of practice I have sometimes seen pursued under a rigid state of the os uteri. I allude to an attempt to forcibly dilate it, by passing two or more fingers within its orifice, without any intention of immediately introducing the entire hand. Such an act can answer no good purpose: it can only produce a greater portion of placental separation, with its subsequent alarming consequence. * * * * When the operation of turning is determined upon, and is once commenced, the difficulties to be encountered in that proceeding are to be met with fortitude, and a cautious perseverance to its termination. The left hand, formed into a conical shape, is to be introduced into the vagina, then gradually through the os uteri into the uterus itself. At the moment of dilating and passing the os uteri, the hæmorrhage is tremendously increased; and if at this moment, from alarm or other cause, the operator should be induced to withdraw his hand, the consequences will be frightful and serious indeed. When he has got thus far in the operation, therefore, he must proceed onward at all risks. If the os uteri be found but little dilated, and be somewhat rigid, it must be carefully and gradually opened by one or more fingers, afterwards by the thicker part of the hand, until the entire hand can be gradually slided within the uterine cavity. The route which the hand must then take will be decided by the occurrences of the moment. But it will generally be found more easy to pass the hand by the side of the placenta, than to penetrate its substance. After entering the uterus, the hand ruptures the membranes, seizes hold of one foot, or both feet, (if they can be readily met with,) and brings down the breech through the os uteri, the pressure of which upon

the bleeding vessels tend materially at this moment to check the discharge. Having gained these advantages, the operator now procures a little respite from action; and of this interval it is desirable to take advantage carefully to inspect the situation of the woman. If the loss already sustained shall have brought on syncope, or excessive faintness, recourse must be had to stimulants, which have been previously got ready at hand; but if it should not seem to have made much impression, stimulants may be dispensed with.

* * * * * *

"When I have been obliged to have recourse to a forced delivery by turning under a state of great exhaustation, I have frequently fancied, that the shock inflicted upon the nervous system by the violence of the operation has greatly increased the danger of the woman, and has sometimes hastened a fatal result. In reflecting upon this presumption, in cases of sudden depression under a placental presentation, it has seemed to me desirable, if possible, to obtain a truce from the flooding before delivery is attempted, that the system may somewhat rally from its preceding effects. I have therefore thought, that if, in these desperate cases, by any gentle means, the liquor amnii could be discharged, without inducing a greater degree of placental separation, some advantage would be derived from uterine contraction, and the violence of the discharge would be thereby checked. I must however in candour declare, that I have not had an opportunity of realizing the practical effect of this suggestion since it occurred to my mind; I offer it therefore merely as an object of future consideration. The method I would propose is, to penetrate the centre of the placenta by a perforator, or other sharply-pointed instrument, and allow the liquor amnii to run off. If the discharge should be thereby checked, delivery may be put off for a short time; but if the discharge should continue afterwards, delivery must not be delayed. Let it be clearly understood, however, that this act will not supersede the necessity of delivery sooner or later, and that it will cause some loss of the child's blood from the laceration of the placental vessels.

"I have repeatedly remarked, that among those cases which have terminated fatally, in several of them that event has seemed to me to be hastened by too quick an extraction of the child; by too sudden evacuation of the uterine contents. If the hand in turning be allowed to enter the uterus without resistance, and if, after it is in complete possession of the cavity, no contractile effort be perceptible in the parietes, the extraction of the child should be very gradually performed. When the breech is brought down, its pressure generally suspends the discharge. When this is the case, there can be no immediate necessity for the quick extraction of the body and head; and I feel perfectly satisfied, that by such a mode of proceeding, much injury is occasionally done to the woman. But on this point, as on many others, the practice must be regulated by the state of the woman, and that of the child, under due discretion and judgment." 295–302.

Fortunately cases of this nature demanding so large an exercise of judgment and firmness on the part of the obstetric practitioner are comparatively rare.

The convulsions that occasionally take place in the puerperal state are described in a really graphic manner (pp. 316–19); and Dr. Ramsbotham seems strongly inclined to join M. Andral in attributing a greater tendency to their occurrence to a peculiar electrical condition of the atmosphere. They are certainly more often observed to happen in thundery weather. Dr. Ramsbotham advises for their treatment,—

"The abstraction of blood, and the free evacuation of the bowels, the constant application of cold evaporating fluids to the whole surface of the head, or the local affusion of a stream of cold water upon the vertex." 326.

The writer of the present article suggests, as a more manageable mode than any other hitherto proposed of obtaining the salutary effects of refrigeration—the use of the *cold pillow*, recommended by his preceptor the late Professor Davis. This apparatus, which is composed simply of a large bullock's bladder, about three parts filled with cold water, and is in general readily attainable, has the advantage of being continually applicable to the vertex of the patient, without the discomfort that attends repeated cold affusions, and with the advantage of being changed with ease, as often as the water contained loses its necessary coldness. In more than one case, the writer has had the happiness of bringing labour with puerperal convulsions to a successful termination, a result which he has in no small degree laid to the instrumentality of the "*cold pillow*."

Many useful practical remarks are comprised in the chapters on Rupture and Retroversion of the Uterus.

The necessity for attending to the condition of the bladder and rectum, and regularly evacuating their contents (particularly those of the former organ) during pregnancy, is strongly insisted on; and many distressing circumstances are shown to have arisen from a non-attendance to these peremptory duties alone. While speaking of rupture of the uterus, our author remarks.

"In all cases of this accident, there is a narrowness if not an absolute deformity of the pelvis, so that perforation of the head becomes, too commonly, indispensably necessary to the delivery. But if the presenting part of the child shall have retreated from the situation which it had previously occupied, so that considerable portion of the child has escaped into the abdominal cavity, delivery must be effected by the introduction of the hand, and extraction by the feet." 428.

Speedy Delivery is proved by Dr. Ramsbotham to be decidedly the indication of treatment in the event of this perilous accident; and by resorting to it he has himself been enabled to save the life of the patient, and even procure her restoration to health, in two out of three successful cases of this nature, which are recorded at the end of the work.

In alluding to the doctrine of superfœtation, our author asserts, p. 391, "an enlightened physiology has nearly exploded the idea of that occurrence,"—but this is an error, if we are to entertain the theories of Raciborski, Drs. Power, Laycock, &c. which contribute to show that superfœtation is not only a very possible event, but probable as well—and offer for it a satisfactory rationale.

We could well have pardoned Dr. Ramsbotham, for pronouncing *ex cathedra* on this and other critical points, upon which no clear light has been thrown till lately. But his objections are always gentle: he has no offensive dogmatism; and with the advantage of obstetric medicine always at heart, he frankly acknowledges when he has been misled.

Dr. Ramsbotham's treatise does not extend to the management of either the mother or child after the completion of delivery. Neither is it furnished with plates of any description; but the principles and practice inculcated are illustrated by upwards of 170 well-selected cases. Altogether, if this work be less copious and comprehensive than some others of its

class, it is still of high value; and, not only as a companion to other works, but for its intrinsic merits, it ought to have a place in every public and private medical library.

A Practical and Theoretical Treatise on the Diagnosis, Pathology, and Treatment of Diseases of the Skin, arranged according to a Natural System of Classification, and preceded by an Outline of the Anatomy and Physiology of the Skin. By *Erasmus Wilson*, Consulting Surgeon to the St. Pancras Infirmary, Lecturer on Anatomy and Physiology, &c. London: Churchill, 1842. 8vo. pp. 407.

The pathology of the Skin is a subject of so much interest and importance that we are not sorry to meet with a work dedicated especially to its consideration. Since the time of Willan and Bateman, the subject has been much neglected in England; the field has been occupied by translations, and it is therefore refreshing to find British energy again bending to the task and seeking to maintain those rights that a long line of distinguished authors, from Daniel Turner downwards, have established. The author o the present volume is known to fame by his works on anatomy, and as the first chapter evinces, this subject and its twin sister Physiology have been laid deeply under contribution in order to plan out a fair foundation, on which as fair a superstructure, should, it might be hoped, arise. And truly, after a careful perusal of the work, we think that Mr. Wilson has succeeded in effecting the object he appears to have had in view, and we shall endeavour to give proof of our opinion by placing before our readers such quotations and comments as may be interesting either from their novelty or practical utility.

To the subject of Classification the author has devoted considerable attention, and he proposes and follows in the present volume a new system of arrangement, for which he claims the designation of the "*Natural System.*" But we quote his words:

"The basis of the natural system of classification rests upon anatomy and physiology, and herein lies its strength, its simplicity, its easy application, and its truth. The dermis and its dependencies, its glands and its follicles, are the undoubted seat of all the changes which characterise cutaneous pathology. These, then, constitute my four primary divisions, namely—

Diseases of the Dermis,
Diseases of the Sudoriparous Glands,
Diseases of the Sebaceous Glands,
Diseases of the Hair and Hair-follicles."

He next inquires into the nature of the general diseases of these separate tissues, and lastly into their particular forms and the varieties of those forms. The author's arrangement is shown in the following table:

1. DISEASES OF THE DERMIS.

- **Inflammation**
  - Congestive
    - Specific: Rubeola. Scarlatina. Variola. Varicella. Vaccinia.
    - Non-specific: Erysipelas. Urticaria. Roseola. Erythema.
  - Effusive
    - Asthenic: Pemphigus. Rupia.
    - Sthenic: Herpes. Eczema. Sudamina.
  - Suppurative: Impetigo. Ecthyma.
  - Depositive: Strophulus. Lichen. Prurigo.
  - Squamous: Lepra. Psoriasis. Pityriasis.
  - From Parasitic Animalcules: Scabies.
- **Hypertrophy of the Papillæ**: Ichthyosis. Tylosis. Clavus. Verrucæ. Cornua.
- **Disorders of the Vascular Tissue**: Vascular Nævi. Purpura.
- **Disordered Sensibility**: Hyperæsthesia. Pruritus.
- **Disordered Chromatogenous Function**
  - Augmentation of Pigment: Nigrities. Pigmentary Nævi.
  - Diminution of Pigment: Albinismus. Vitiligo.
  - Alteration of Pigment: Ephelis. Lentigo. Chloasma. Melasma.
  - Chemical Coloration: Oxyde of Silver Stain.

II. DISEASES OF THE SUDORIPAROUS GLANDS.

- Augmentation of Secretion . . . . . Sudatoria.
- Diminution of Secretion
- Alteration of Secretion . . . . . Abnormal Odour, Colour, &c.

III. DISEASES OF THE SEBACEOUS GLANDS.

- Augmentation of Secretion . . . . . Steatrhœa.

- Diminution of Secretion.
- Alteration of Secretion . . . . . Ichthyosis Sebacea.
- Retention of Secretion
  - Duct Open . . . Comedones. / Sebaceous Accumulations. / Small Sebaceous Tumour, (*Molluscum Contagiosum.*)
  - Duct Closed . . Sebaceous Miliary Tubercles. / Calcareous Miliary Tubercles. / Serous Cysts. / Encysted Tumours.
- Inflammation of Glands and adjacent Textures . . . Acne. / Sycosis.

IV. Diseases of the Hairs and Hair-Follicles.

- Augmented Formation . . . . . Pilos Nævi.
- Diminished Formation . . . . . Alopecia. / Calvities.
- Alteration of Colour . . . . . Canities.
- Disease of the Hair-Pulps . . . . . Plica Polonica.
- Disease of the Follicles. . . . . Inflammatio Folliculorum. / Favus.
- Abnormal Direction . . . . . Trichiasis. / Felting.

We consider this classification to be a decided improvement on that of Willan, which has been generally followed to the present day. The Willanean system is founded on the more obvious external characters of the disease, and is neither scientific nor philosophical. For instance, if the disorder consist of vesicles, the disease belongs to the order *Vesiculæ*; if pustules, *Pustulæ*; if pimples, *Papulæ*; if scales, *Squamæ*, &c. Here then it would seem at first sight that a fixed and unsliding scale is laid down, by which the school-boy might jump to a correct diagnosis of the disease. But is this supposition founded in fact? We think not; nay, we know that the diagnosis of diseases of the skin is in the highest degree perplexing to many practitioners. But this is not all; the system involves other and greater objections; the same disease may and actually does, as in the case of small-pox, pass through several different orders of the Willanean Classification in its course. At first it is an *exanthem*; seen a little later, it would be classed under *papulæ*; still later, it is a *vesicular* affection; and after that, it becomes a member of the order *pustulæ*, where we find it located by Willan. But we pass over this and other objections to the artificial system of Willan, to inquire how far similar objections may be made to the classification of our author. It must be confessed that these do not exist: Mr. Wilson has based his system on the immutable principles of sound pathology, and he has, to use his own words, "created a system which should embrace all the advantages of the natural system (as applied to botany), while it retained all the benefits derivable from the artificial system." The ordinary principles of diagnosis employed in the Willanean system are equally applicable in the natural system; if the disease is vesicular, the practitioner will find it under the head of "In-

flammation of the Skin, terminating in effusion;" if pustular, under Suppurative Inflammation; if scaly, under "Inflammation terminating in the Production of Squamæ," in other words, squamous inflammation; if papular, under inflammation terminating in deposition in the dermic tissues, &c. But the whole of these diseases are collected together under a designation indicative of their pathological state, namely, under that of "Inflammation of the Dermis." We need scarcely point out the therapeutic advantages of this arrangement, the general principles of treatment of inflammation must be applicable to the whole of the diseases included under that group, and these are nearly the whole of the affections commonly known as the diseases of the skin. Another feature in this classification is deserving of note: it is the retention of all the names hitherto used in reference to these diseases. "I should have esteemed," writes the author, "a natural and perfect classification as dearly purchased, at the sacrifice of a familiar nomenclature. I have scarcely changed a single term of Willan's glossary, and in the few instances in which I have departed from this rule, I have been guided by weightier considerations than those of accommodating diseases to a system of my own."

We have always regarded the extreme subdivision of diseases as one of the errors of cutaneous pathologists, and we are glad to find our author expressing the same sentiments. He observes, in his Preface, page 10,

"Another objection to the Willanean Classification is less important, but still a blemish in his system. I allude to the imitation of the divisions and subdivisions employed in the arrangement of zoological or botanical subjects. Thus, starting with a *Class*, Cutaneous Disorders, Willan established eight *Orders*; each of these Orders has its *Genera*, and Genera their *Species*. But pathological appearances do not admit of this gradation of subdivision, and no advantage can possibly flow from its adoption. The most that can be admitted is a class of Cutaneous Diseases—these divisible into orders, or groups; but the groups separate at once, to the exclusion of genera, into individual diseases, or species, and varieties of those diseases. The differences between any two varieties are never so strongly marked as to admit of consideration as species, in the proper sense of employing that term."

But leaving the subject of classification, which we have already permitted to engage so large a share of our attention, we will proceed to the other topics treated of in the volume. The first chapter, as we before observed, is devoted to the Anatomy and Physiology of the Skin, a knowledge of which, it is presumed, is absolutely necessary to the perfect comprehension of the pathology of the organ. We select from this chapter, as illustrative of the manner in which the author treats his subject, his description of the hair, with the manner of its growth and development.

"Hairs are horny appendages of the skin, produced by the involution and subsequent evolution of the epidermis; the involution constituting the follicle in which the hair is enclosed, and the evolution the shaft of the hair. Hairs vary much in size and length in different parts of the body; in some, they are so short as not to appear beyond the follicle; in others, they grow to an enormous length, as on the scalp; and along the borders of the eyelids and on the beard they attain to a very considerable thickness. Hairs are generally more or less flattened in their form, and when the extremity of a transverse section is examined with the microscope, it is found to present an elliptical or reniform outline. This

view of a hair exhibits also an important fact with regard to its structure—namely, that the hair is porous and loose in texture in the centre, and dense in its circumference, affording some ground for the statement of its constitution of a cortical and medullary portion. The free extremity of a hair is generally pointed, and sometimes split in two or three filaments. Its attached extremity is implanted deeply in the integument, extending through the dermis into the subcutaneous areolar tissue, where it is surrounded by adipose vesicles. The central extremity of a hair is larger than its shaft, and is called the root, or bulb. It is usually infundibular in form in the larger hairs, and conical in the smaller hairs, and in those of the head.

"At the bottom of each follicle is a vascular and sensitive formative substance, or pulp, which is analogous to a papilla of the dermis, and is the producing organ of the hair. The process of formation of a hair by its pulp is identical with that of the formation of the epidermis by the papillary layer of the dermis. A stratum of plastic lymph is, in the first instance, exuded by the capillary plexis of the pulp; this plastic lymph, or blastema, undergoes conversion, firstly, into cyto-blasts, and then into cells; and these latter are lengthened out so as to correspond with the axis of the hair, and constitute a fibrous structure.

"This is the mode of formation of the greater part of the diameter of the hair; but the cells of the superficies comport themselves differently, in order to provide the polished surface which is characteristic of these structures. In this situation, as upon the surface of the epidermis, the cells are converted into flat scales, which enclose the fibrous structure of the interior. These scales, as they are successively produced, overlap those which precede and give rise to the rough and waving lines which may be seen around the circumference of a hair. It is this overlapping line that is the cause of the roughness which we experience in drawing a hair from its point to its bulb between the fingers, and the loosened state of the borders of these scales has given rise to the notion entertained by Leeuwenhoeck, of branches growing out from the shaft. The bulb is the newly-formed portion of the hair, it corresponds in figure with that of the pulp, and its expanded form is due to the greater bulk of the fresh cells, as compared with the fibres and scales into which they are subsequently converted in the shaft of the hair.

"The colour of hair, like that of the epidermis, is due to the presence of pigmentary granules, contained within the cells. In the white hair of Albinoes, there is a total absence of the colouring principle of these granules, and in some forms of the blanched hair of age, a white pigment supplies the place of the tint of early life." 11.

The second chapter treats of Diseases which are characterised by Congestive Inflammation of the Skin. Of the seat of congestive inflammation the author remarks:—

"The immediate seat of the inflammatory congestion of the exanthemata is the vascular rete of the dermis, and the difference of tint observable in these diseases at their height and during their decline, is sufficiently explained by reference to the structure and normal phenomena of the skin. When the degree of excitation of the cutaneous nerves is small, and the arterial determination but little exalted above the ordinary standard, the vascular rete of the dermis is only partially congested, and the redness produced by this congestion is slight; such is the redness, with slight modifications depending on degrees of intensity of nervous excitement, which is seen in erysipelas, roseola, and erythema. When, however, the nervous activity is aroused to its highest pitch of energy, as in scarlatina, the congestion is most intense, and the bright scarlet of the arterial blood coursing through its vessels is little obscured by the thin veil of epidermis which binds it in its sphere. The congestion in rubeola, scarlatina,

and variola, is not confined to the parallel strata of the vascular rete of the dermis, as in the second group of exanthemata, but many of the papillæ of the dermis are also distended with blood, and give rise to that punctiform appearance of the redness which is characteristic of these eruptions.

The crescentic form of the congested patches seen in rubeola, depends upon some unexplained peculiarity in the distribution of the cutaneous nerves, and corresponds with that natural appearance of the skin which is so frequently seen in healthy children, and which is denominated, mottled. Again, I have observed, that in injecting the limb of an infant with size and vermillion, I can imitate all the forms of redness seen in the exanthematous diseases by ceasing to inject from time to time, or by filling the capillaries to their uttermost." 23.

In reference to the transmission of cutaneous disorders by contagion and infection, Mr. Wilson gives the following definition of those terms.

"In their more usual acceptation, the terms infection and contagion relate to modes of transmission of a poisonous principle. When the transmission is effected by a material substance, and is brought about by actual contact, the term *contagion* (immediate contagion) is employed; but when transmission is effected through the agency of the winds, and at a distance, the mode of communication is designated *infection*, (mediate contagion.) In other words, when the poisonous principle is volatile, and capable of diffusion in the atmosphere, it is infectious; but when this diffusibility is absent, it is simply contagious.

"In whatever way the poisonous principle be brought to the body of a sound person, and with whatever part of his body it may come in contact, whether with the cutaneous surface with or without abrasion, as in contagion, or with both the cutaneous and mucous surface in infection, the mode of its reception by the system is the same. In the first instance, it is dissolved in the fluids of the body, and, in the second place, is conveyed by imbibition into the circulating current of the blood, thence to act on the nervous system, and alter its functions. Once introduced into the system, the poisonous principle possesses the remarkable power of exciting an action similar to that which existed in the body whence it emanated, the intention of that action being the reproduction of an identical poison. Liebig has compared this process to fermentation; as, when a particle of yeast is brought in contact with a fermentable fluid, the particle of yeast is itself lost, or is too insignificant to be traced further; but the action which it excites occasions the formation of an abundance of similar yeast." 26.

In the treatment of Scarlatina, the author speaks favourably of cold affusion, to which he attributes a sedative effect on the nervous system. In the treatment of Variola he compares the value of different *ectrotic methods* which have from time to time been recommended, and bestows a merited encomium on the mercurial plaster of Vigo. The following observations on the influence of light in the development of the variolous pock are interesting.

"An impression subsisted among the ancient physicians, that the light of the apartment in which small pox patients are kept, should be either modified or excluded. In pursuance of this view, the rooms were hung with scarlet cloth, and the windows carefully blocked up. So recently as 1832, Dr. Picton, of New Orleans, asserts that in his practice no instance of pitting after small-pox occurred when the light was shut out. M. Serres placed a glass capsule over a small-pox pustule, and observed the effects produced by excluding the air and light. He found, that in proportion to the exclusion of both was the develop-

ment of the pustule checked, and that when they were completely shut out, the pustule became shrivelled and quickly dried up Moreover, M. Serres remarks, that he never reaped such successful results, in the cure of small-pox, as he did at La Pitié, during one year that the patients were placed in a kind of cellar, which was very dark and ill-ventilated. The same principle has been more recently acted on by M. Legrand, who proposed to the Academy of Medicine, in 1839, the plan of covering the surface of the body with gold leaf. After the experiments of M. Fourcault this practice would appear somewhat hazardous." 66.

The author maintains that Rubeola, Scarlatina, and Variola, originate "in the same morbid contagion, the differences between them depending on modification either of the physical or of the vital condition of the system by which the contagion is received." Varicella, again, he considers to be an arrest of development of small-pox, and the forms which it assumes as capable of being deduced from the observation of the natural course of small-pox. Thus,

"Varicella in this point of view, may be regarded as an arrest of development of variola, and the forms which it is capable of assuming may consequently be deduced from the observation of the natural course of small-pox. Thus, if the variolous disorder were to expend itself in its first stages, we should have a varicella resembling the papular eruption of small-pox, in other words, a *papular varicella;* if the variolous disorder progress beyond this stage, we shall then have a *vesicular varicella;* and if it proceed still further, a *pustular varicella.* The latter, however, is capable of presenting some modifications; in one of these, the contents of the conical vesicles are simply transformed into a purulent fluid, without any alteration of their form; this constitutes the *conical pustular varicella:* in another, the purulent fluid distends the vesicle to so great an extent, that it presents a globular figure; this is the *globular pustular varicella;* while in a third, the pustules assume the characteristic features of those of variola, being flattened and umbilicated; this, which is the most advanced grade of varicella, is the *umbilicated pustular varicella.*" 68.

On the subject of Variola Vaccinia, Mr. Wilson enters as largely as its importance deserves, treating successively of the identity of vaccinia and variola; of variola vaccinia in the cow and man, casual and vaccinated; of the secondary eruptions of vaccinia; of the protective power of vaccination; of the tests of vaccination; and of the various modes of restoring the influence of vaccination by revaccination; variolation after vaccination; retro-vaccination; variola-vaccination and recurrence to the primary vaccine vesicle. Of the theory of vaccination, he thus speaks:—

It is a principle, well established in pathological science, that the animal system, once subjected to the influence of any disease originating in specific contagion, is protected, to a greater or less extent, against subsequent incursions of that disorder. Thus we observe that the modification which the system undergoes in the reception of rubeola and scarlatina, is protective of the individual against that contagion for the rest of life. The same circumstance is remarked with regard to small-pox, and other contagious fevers. When this fact was contemplated by the medical philosopher, in association with the fearful ravages of that dreadful pestilence and scourge upon the human race, small-pox, such as it existed in former ages, the expedient suggested itself to his mind, that if the disease could be anticipated, if the disorder, in a mild form, could be communicated to man, life would be spared, and the system equally defended against

the subsequent contagion of a more virulent and fatal disease. This design, happy in thought, and happy in application, gave birth to the practice of inoculation for small-pox. Inoculation for small pox, however, was not free from objection; the disease thus engendered was always serious, often fatal, and frequently it became the source of a malignant contagion. In this state of demi-subjugation, small-pox was found by Jenner, when the well-known fact of the protective influence of cow-pox first engaged his attention, and aroused in his comprehensive mind the philanthropic thought that spread happiness and security where gloomy anticipations and uncertainty had previously existed. He had the talent to perceive in cow pox, small-pox, in its mildest possible form; and he trusted that the transmission of this to man would ensure the same results as inoculation with the virus of human small-pox. This trust was rewarded by the complete success which attended the prosecution of his views." 81.

The fourth chapter is occupied by the consideration of diseases characterised by effusive inflammation of the dermis, a group containing five diseases, Pemphigus, Rupia, Herpes, Eczema, Sudamina, corresponding with the two orders Bullæ and Vesiculæ of Willan. The fifth chapter is devoted to diseases characterised by suppurative inflammation, including Impetigo and Ecthyma, corresponding with the order Pustulæ of Willan. The sixth chapter treats of diseases consisting in "depositive inflammation of the dermis, corresponding with the order Papulæ of Willan, and embracing three diseases, Strophulus, Lichen, and Prurigo. While the seventh chapter contains the description of the squamous diseases. In the treatment of the latter affections, arsenic has long been a favourite remedy, and this has lately given place to a triple compound of iodine, arsenic, and mercury, the liquor hydriodaties arsenici et hydrargyri, suggested by Mr. Donovan of Dublin. Of the physiological effects of arsenic, Mr. Wilson remarks—

"Arsenic, when it acts on the nervous system, performs the part of an alterative: but when its effects are directed upon the digestive system, it appears to me to act like cantharides upon the mucous membrane of the kidney—viz. by counter-irritation, by exciting inflammatory action in the interior, and thus determining from the surface."

"The liquor hydriodatis arsenici et hydrargyri is exhibited in doses of half a drachm three times a day for the adult. It is liable to give rise to headache and nausea, and sometimes to salivation, during its use, and on the occurrence of these symptoms, it must be suspended for two or three days. The best vehicle for its exhibition is tincture of ginger, and it may be employed with advantage as a local application."

Chapter eighth is entitled "Inflammation of the Dermis induced by Parasitic Animalcules inhabiting the Epidermis." This definition applies only to Scabies, of which the author gives the following account.

"Scabies is an affection of the skin, characterised by scaliness of the epidermis, by vesicles, and in severe cases by pustules; to which may be added accidental abrasions and scratches produced by the nails. It is accompanied by excessive itching, the itching being augmented by warmth and by the use of stimulating food and drinks.

"The above appearances are due to the presence of a minute animalcule, the acarus scabiei, which burrows beneath the epidermis, and excites irritation in the papillary surface of the dermis. The burrowing of this little creature gives

rise to the *scaliness* (scalrities) and undermined state of the epidermis. The vesicles, which are few and scattered, bearing no proportion to the number of the acari, and little relation to their seat, present some differences in form and character, respective of their position. Thus in the thin epidermis of the lateral surfaces of the fingers they are distinctly conical and acuminated; on the wrists and other parts of the body they are frequently more or less rounded, and resemble the vesicles of eczema: while in the latter situations they are also variriable in size. The vesicles differ in reference to their contents; in those of a conical form, the contained fluid is transparent and viscous; in the rounded vesicle the fluid is also transparent, but in some it is more or less opaque and puriform. The pustules are present only in severe cases, or in persons with an extremely sensitive skin; they are generally psydracious, and vary in size, from the small pustule of impetigo to the larger pustule of ecthyma.

"When one of the early vesicles of scabies is examined with attention, a minute spot or streak, may be observed upon some one point of its surface. This is the aperture originally made by the insect on its first entrance beneath the epidermis, and from this spot or streak a whitish line may be traced either in a straight or a curved direction into the neighbouring epidermis. The whitish line is the *cuniculus*, or burrow of the acarus; it necessarily varies in length, being sometimes as much as five or six lines in extent, and at its termination under a slight elevation of the epidermis, the little inhabitant lies concealed. The acarus may easily be distinguished by the experienced eye as a small dark point at the end of the cuniculus, and if a thin capsule of epidermis be raised in this situation with the point of a needle, the little creature is brought into view. It should be needless to remark, that eyes must be properly selected for the manipulation, and a bright light carefully chosen.

"The spot or streak which is here described is not met with on all the vesicles, for the same animal may excite a series of these in its course; and a number may be developed in the vicinity of its habitation, while in the primitive vesicle alone—that formed by the entrance of the acarus—it is, that the trace of its entrance can be expected. The aperture, again, does not communicate with the interior of the vesicle; it is the too close neighbourhood of the little *grubber* that acts as the cause of formation of the vesicle: the vesicle is consequently a provision of nature to protect the dermis from the nearer approach of the *arator*, and the vesicle is formed with the judgment which usually marks nature's operations—namely, before a defensive provision would be too late. The acarus scabiei, therefore, is *never* situated within the vesicle or within the pustule, and there is no communication between the vesicle and the cuniculus." 239.

In comparing the present with the preceding groups of diseases, Mr. Wilson remarks—

"The preceding groups of diseases, whether they originate in a local or a general cause, depend upon some pathological condition of the nerves and vessels of the system, or of the part affected. As a consequence of this pathological condition, we may have inflammation of the dermis in the various forms, hereinbefore discussed—namely, congestive, effusive, suppurative, or squamous. The present group differs from the rest in obeying a specific cause, which may be present without exciting any general or local disorder of the nervous or vascular system, the seat of the cause being the extra-nervous and extra-vascular epidermis. When, however, the cause has been present for a certain period varying with its number and with the temperament of the individual, we find such local effects produced as would result from the presence of the most common irritant. In the first instance, there is simple excitation of the peripheral nerves, giving rise to pruritus; next, there may be congestion of the capillary vessels; thirdly, there may be effusion of transparent lymph beneath the epi-

dermis, constituting vesicles; and lastly, there may be suppuration, and the formation of pustules; each of these stages following an ascending grade of irritation; the degree in which the irritation is evinced depending in a greater measure on the temperament of the individual than upon the quantity of the cause.

"Guided by the Willanean classification alone, we should be led, seeing the alterations above described, in their first stage, to refer the disease to that group which includes erythema; in its second degree of severity, we might follow the example of all the dermatologists of the present day, and regard it as a vesicular disease, while in the highest and less frequent form of aggravation we should place it, as did Willan, among the pustules. It is clear, from the differences of such distinguished men, that any attempt to deduce its true position in cutaneous nosology from the accidental appearances respective of degree of irritation that it may present, must not only fail, but lead to serious errors in diagnosis. I have seen cases of scabies in which there were no vesicles and no pustules, but, nevertheless, the acarus revelled there in undisturbed enjoyment. Where would be the reputation of the medical practitioner who took no steps in such cases to protect the families in which they existed against the transmission of so repulsive a disease?" 288.

In the ninth chapter those diseases are assembled which depend on hypertrophy of the papillæ of the dermis; a pathological condition that, determined to be present in Icthyosis, causes the removal of that disease, from the squamæ of Willan, to a much more natural group, including corns, warts, and horns. The tenth chapter comprehends, under the title of disorders of the vascular tissue of the dermis, Nævus and Purpura. The eleventh chapter includes disorders of the sensibility of the dermis, and the twelfth, disordered colouration of the skin.

Diseases of the sudoriparus glands form the subject of chapter thirteen, and diseases of the sebaceous glands of chapter fourteen. Under the name of Icthyosis Sebacea, the author describes a remarkable form of concretion on the surface of the skin, simulating ichthyosis, and, no doubt, sometimes mistaken for that disease.

"In addition to simple increase in quantity, it occasionally happens that the secretion of the sebaceous glands is also altered in its quality; when this is the case, the secretion spreads upon the surface of the epidermis, and forms a thin layer, which dries and hardens, and breaks in the direction of the linear markings of the skin into small polygonal portions, corresponding in form with the areæ of the compartments, bounded by these cutaneous lines. The small polygonal divisions are increased in thickness by the accumulation of fresh sebaceous secretion, they become discoloured from exposure to dust and dirt, and they assume a brownish or grayish tint, approaching more or less to dirt colour. In the latter state, the small masses have the appearance of scales, (icthyosis sebacea,) closely adherent to the epidermis, hard and dense in texture, and presenting various degrees of thickness. This affection may occur upon any part of the body, but is most frequent on the face, particularly on the forehead and the nose, upon the abdomen, and upon the flexures of joints; indeed, upon all those regions in which the greatest number of sebaceous glands exist, and which are most protected from the friction of dress. The scales are sometimes cast from time to time, particularly during the summer season, and give place to others formed by successive concretion; at other times they remain adherent for months, and even for years." 292.

This disorder has recently been made the subject of a pamphlet by Dr.

Jacobovics of Pesth, in which that author ascribes to it the name of "tubercules bigarrés," and erroneously considers it a new variety of Molluscum. On Molluscum Contagiosum Mr. Wilson disserts largely, and advances some new cases of this disorder. He positively denies the contagious property ascribed to the disease by Bateman, and examines the evidence of their nature and history given by Tilesius, Bateman, Dr. John Thomson, Dr. Carswell, Alibert, Biett, Cazenave and Schedel, Gilbert, Dr. Jacobovics, Dr. Henderson and Dr. Paterson.

The diseases of the Hairs and their Follicles engage the thirteenth Chapter. Ringworm is considered under the name Favus, assigned to it by Rayer, and the complexity which has hitherto attended this disease is well explained by the author.

"No term has been more abused in medical nomenclature than has the word *porrigo*, and the confusion which exists in relation to the precise disease intended to be conveyed by the appellation will not cease, until the term is discarded altogether. It is with this view that I have made no use of it in the present treatise, other than as synonym. The species of porrigo of Willan, applied by that author to the disease under consideration, are two—*porrigo lupinosa*, corresponding with our favus dispersus; and *porrigo scutulata*, the favus confertus. A very common appellation for favus in the words and works of many of the most eminent English practitioners of the present day. and, indeed, the most correct term, is *porrigo favosa*. Here I conceive Willan erred; for both that author and Bateman employ the designation as significant of a variety of impetigo—impetigo of the scalp. *Porrigo larvalis* is impetigo faciei; *porrigo furfurans* appears to be an eczema, or, probably, pityriasis; and *porrigo decalvans* an alopecia." 345.

Speaking of the supposed vegetable nature of this disease, Mr. Wilson observes, and very justly:

"However closely the fungous growth here may resemble a plant, its vegetable nature is very far from being established. The simplest forms of animals are composed, like the mycodermis, of cells, variously connected together; and subsequent research may prove the growth under consideration to be of a similar nature. To my mind there is nothing improbable in the supposition of the origin of the growth from morbidly developed epidermic cells of the hair-follicle, or from the corpuscles of the sebaceous substance. In a preceding section of this work, I have shown that the latter are susceptible of considerable alteration, and that in this state they assume an appearance widely different from that of their normal condition. Mr. Busk also entertains doubts with regard to the vegetable nature of the mycodermis, and deduces an opinion favourable to his opinion, from the chemical analysis of the crusts of favus, given by Thenard, who found them composed of

Albumen	70
Gelatine	17
Phosphate of lime . . .	5
Water and loss	8
	100."

Syphilitic affections of the skin form the subject of chapter sixteen; while the seventeenth and last is occupied by the history and description of the entozoa of the skin, the acarus scabiei and folliculorum; the preparation and therapeutic effects of two new medicines, Anthrakokali and Fuligokali; and a notice of three cases of a very rare disease, the Sudatoria, which occurred in Paris during the summer of 1842.

The Acarus folliculorum was discovered by Dr. Simon of Berlin, and a paper describing his discovery with figures of the animal, appeared in Muller's Archive for June 1842. The description of the animal given by the discoverer is however very imperfect as regards its anatomical structure. Mr. Wilson, in the work before us, makes some additions to the anatomy of the animal, and in a paper recently read before the Royal Society finds reason to alter the name of the creature, to entozoon folliculorum. In this paper he gives an elaborate description of the anatomy of the Entozoon, shows that it differs essentially from the generic characters of Acarus, and discovers its ova and mode of development, the latter being an elaborate and curious process. Of his success in finding the animal after perusing the paper of Dr. Simon, he thus speaks:

"I was not long in obtaining subjects: almost every face that I met supplied me with abundance, and the difficulty seems to be, not to find the creature, but to find any individual, with the exception, according to Dr. Simon, of newly-born children, in whom these animalcules do not exist. It is by no means necessary to commence our search by selecting an acne punctatem, or even a comedo; almost every collection of sebaceous substance which can be squeezed forth from the numberless cutaneous apertures upon the nose, the forehead, the face, and probably from other parts of the body, will furnish subjects. Moreover, Dr. Simon has observed that the parasites are situated near the mouth of the follicle; consequently, that portion of sebaceous substance which is squeezed out with the least force is the part which is most likely to be inhabited by the acarus.

"The acarus folliculorum would seem to give rise to no uncomfortable effects by its presence, unless, perchance, it should multiply to such an extent as to become a source of irritation to the follicle—a supposition which Dr. Simon admits, for it is found in persons whose skin is perfectly healthy and clear, and in whom no signs of cutaneous irritation are present. These animalcules undoubtedly feed on the sebaceous substance in which they lie embedded, and which is the cause of their existence. I have commonly found two in the small mass of this substance expressed by the fingers, often four and five, and in one instance eight closely connected together. Hitherto I have confined my examinations to living persons, having levied for contributions among my more intimate friends, and have not as yet had recourse to a skin studded with acne." 389.

We have now reached the conclusion of the volume, and our perusal has been both agreeable and instructive. The work is well got up, it is illustrated with a wood-engraving title-page of the entozoon folliculorum, and presents an excellent key to its matter in an ample table of contents and alphabetical index. The book is not written for a day, but for an age; the style is good and precise, the language well selected, and the information which it contains genuine and copious. We think it adapted to cast a new light on the pathology and treatment of diseases of the skin, and to form an admirable guide to the medical practitioner, to whom and to the student we warmly recommend it.

PRINCIPLES OF HUMAN PHYSIOLOGY, WITH THEIR CHIEF APPLICATIONS TO PATHOLOGY, HYGIENE, AND FORENSIC MEDICINE. Especially designed for the use of Students. By *William B. Carpenter*, M.D. Lecturer on Physiology in the Bristol Medical School, &c. London, Churchill, 1842. pp. 680.

THE elementary treatises on Physiology published in this country of late years, have scarcely brought their information up to the level of the science which existed even at the time of their first appearance: and the rapid progress of physiological knowledge has now left them far in the rear. The works of Bostock, Elliotson, Mayo, and others, though containing much valuable matter, scarcely touch upon certain facts recently established, and views recently divulged, which at present give, to the whole science of life, its principal impulse and direction. Dr. Carpenter's book, therefore, has not made its appearance uncalled for, while its peculiar character would have rendered it valuable, even though the sources of elementary information for the English student of physiology had been more abundant than they are. It might be thought that the excellent English versions of the first German physiologists which have either been recently completed, or are now in progress—as those of Muller and Wagner—would have supplied the deficiency referred to. But it will be found on examination, that these works, though of a higher scientific cast than the treatise before us, are not as well calculated for the use of the student—the profound and original views, and elaborate detail of the minutest facts with which they abound, rendering them much more profitable to the mature physiologist, than to one only just entering on the same grand but bewildering field of research. Dr. Carpenter's work is, in particular, much better adapted to the medical student than any other of the kind that we have met with, in as much as its plan has a direct reference to medicine, and the bearings of physiology on the various branches of that science and art are set forth in a philosophical and lucid manner.

Dr. Carpenter introduces his subject by a general view of the connexion of physiology with the other branches of medicine. This introduction cannot be too strongly recommended to the student. It contains a very able and comprehensive yet simple exposition of the relations of the science of life to medicine in general—of the dependencies of the different branches of medicine on each other—and of the relative value of the practical conclusions derived from scientific principles, and from direct experience.

CHAPTER I. treats of the place occupied by man in the scale of being, and involves the consideration of the distinction between animals and plants—the general subdivisions of the animal kingdom—the characters of its four primary groups—and the characteristics of man. All these subjects are treated with accuracy and judgment. The following is an ingenious addition to the various attempts at forming a precise line of demarcation between animals and vegetables.

"A distinction might probably be erected between the animal and vegetable kingdoms, upon the mode in which the first development of the germ takes place. The seed of the plant at the time of fertilisation, principally consists of a store of nourishment prepared by the parent for the supply of the germ, which is introduced into the midst of it. The same may be said of the egg of the animal. In both instances, the first development of the germ is into a membranous expansion, which absorbs the alimentary materials with which it is in contact, and prepares them by assimilation for the nourishment of the embryonic structure, the most important parts (in the higher classes of animals, and in phanerogamic plants, the only permanent parts) of which are in its centre. Now, in plants, this membranous expansion (the single or double cotyledon) absorbs by its outer surface, which is applied to the albumen of the seed, and takes it more or less completely into its own substance. In animals, this expansion is developed in such a manner, that it surrounds the albumen, enclosing it in a sac, the *inner* surface only of which is concerned in absorption. This sac is, then, the temporary *stomach* of the embryonic structure; it becomes the permanent stomach of the radiata; but in the higher classes only a portion of it is retained in the fabric of the adult,—the remainder being cast off, like the cotyledon of plants, as soon as it has performed its function. Thus, then, the first *nisus* of animal development is towards the formation of a stomach, for the internal reception and digestion of food, whilst the first processes of vegetable evolution tend to the production of a frond-like membrane, which, like the permanent frond of the lower classes of plants, absorbs nourishment by its expanded surface only." 12.

This distinction obtains uniformly till we descend to the lowest degrees of the animal scale; but here we meet with an exception in the early condition of the branching asterioda, which, before the development of the polype-cells, appear to be nourished by absorption throughout their surface, but which, though not yet perfectly developed, are, nevertheless, unquestionably animals. It is not improbable that the attempts to discriminate between the essential nature of animals and plants may lead to results widely different from those with a view to which they have been instituted.

It is nearly certain that all organised bodies, whether animal or vegetable, originate from a similar germinal spot, and are at first developed by a like process—the successive evolution of cells. The more we become acquainted with the organisation of animals and plants, the more points of similarity do we discover among them; while, with reference to the lowest types of presumed animal existence—the porifera—the further we investigate them, the less ground do we find for certainty as to which kingdom they belong to.

These considerations would rather incline us to infer, that animal and vegetable life are not separated by any exact boundary, and that certain beings, low in the scale of organisation, not only appear to be, but actually are, connecting links between them.

CHAPTER II. embraces a general view of the functions of organised bodies based upon the important physiological truth, that the state of life, in whatever form, is one of perpetual change. The grand distinction between an inorganic and a living body is this: an inorganic body, in order to preserve its existence in the same form, must be exempted from the impression of surrounding bodies;—in other words, it must remain

unchanged; a living body, on the contrary, in order to preserve its existence in the same form, must be kept in a state of perpetual relation to surrounding bodies, and must be constantly impressed by them so as to undergo continual changes. The one remains both apparently and substantially the same body; the other continues apparently the same but is not substantially so at any two periods of its existence, which existence is in effect a series of continuous repetitions of itself, each repetition deviating, in an imperceptible degree, through the various stages of growth, development, maturity, and decay, till the susceptibility of reaction—the condition of the state of vital relation—is abolished, and the phenomena of life and the existence of the individual organism cease along with it. Dividing the functions of the human body into those of vegetative and those of animal life, our author gives a perspicuous general view of each, into which it is not necessary that we should here enter.

CHAPTER III. is on the functions of the nervous system, and evinces in a remarkable degree, the extensive information and sound understanding of the author.

Nothing can be more just, guarded, or appropriate than the following remarks on the sensorial functions—a subject on which physiological writers in general are extremely apt to commit themselves.

"It is well to explain that, though the physiologist speaks of the intellectual powers, moral feelings, &c. as *functions* of the Nervous System, they are not so in the sense in which the term is employed in regard to other operations of the bodily frame. In general, by the *function* of an organ, we understand some change which may be made evident to the senses, as well in our own system as in the body of another. Sensation, Thought, Emotion, and Volition, however, are changes imperceptible to our senses, by any means of observation we at present possess. We are cognisant of them in ourselves, without the intervention of those processes by which we observe material changes external to our minds; but we judge of them in others, only by inferences founded on the actions to which they give rise, when compared with our own. When we speak of sensation, thought, emotion, or volition, therefore, as functions of the Nervous System, we mean only that this system furnishes the conditions under which they take place in the living body; and we leave the question entirely open, whether the Ψυχη has or has not an existence independent of that of the material organism, by which it operates in Man as he is at present constituted." 80.

In this chapter Dr. Carpenter gives an excellent view of the elementary structure of the nervous system—of the elementary functions of nervous structure—of the mode of determining the functions of nerves—of the nature of the changes which take place in the nerves when they receive and transmit impressions—of the comparative anatomy and physiology of the nervous system—and of the structure and functions of the same system in the vertebrata, and especially in man. The physiological anatomy of the cerebro-spinal axis is here detailed with greater fullness and accuracy than in any English work with which we are acquainted. The chapter concludes with a general recapitulation and pathological applications which we wish we could transcribe entire. The following, which is all for which we can find space, will convey an idea of Dr. Carpenter's comprehensive and lucid manner of treating such subjects.

"A general Summary of the views here propounded, in regard to the Func-

tions of the Cerebro-Spinal division of the Nervous system, may probably be useful in assisting the Student to gain clear ideas regarding them.—The fibres of the nervous trunks may be divided according to the direction of their influence, into two classes,—the *afferent* or *centripetal*,—and the *efferent* or *centrifugal*. The afferent may be said to commence at the periphery, especially on the skin, mucous surfaces, &c., and to terminate in the gray matter of the nervous centres; whilst the efferent originate in that gray matter, and terminate in the muscles.* Every fibre runs a distinct course from its origin to its termination; and it is not improbable that the endowments of the different fibres composing each trunk are very distinct. From the great vascularity of the gray matter, and the occurrence of a structure of corresponding character around the origins of the afferent nerves, it is evident that its functions must be different from those of the fibrous structure; and, whilst there is no evidence that the latter serves any different purpose than that of a mere conductor, there seems good reason to believe that all the active operations, of which the nervous system is the instrument, originate in the former. A mass of gray matter connected with nervous trunks, forms a *ganglion;* and in the invertebrata, the ganglia are frequently numerous, and are scattered through the system, without much connexion with each other,—each having a distinct function. In Vertebrate animals, on the other hand, they are united into one mass,—partly, it would seem, for the sake of the protection afforded them by the bony skeleton,—and partly in order that more complete consentaneousness of action may be attained. Still several distinct divisions may be traced in the centres of the cerebro-spinal system,—partly by the determination of their respective functions, as indicated by observation and experiment,—and partly by the study of the distribution of the nerves proceeding from them. In this manner we arrive at the knowledge of several distinct ganglionic centres, of which the following may be considered as a general account.

I. The True Spinal Cord, consisting of a nucleus of gray matter, receiving afferent fibres, and giving origin to efferent; by these it is connected with all parts of the body, but especially with the surface and muscles of the extremities. The actions of this centre may be performed without consciousness on the part of the individual; and they consist in the reflection of a motor impulse along an efferent nerve, on the reception of a stimulus conveyed by an afferent or excitor nerve. These reflex movements can be best excited, when the muscles are removed from the control of the will, which otherwise would generally antagonise them. Some of them are connected with the maintenance of the organic functions; and others with the protection or withdrawal of the body from injury. Muscular movements may also be excited by a stimulus directly applied to the Spinal Cord itself.

II. The Medulla Oblongata, or cranial prolongation of the Spinal Cord. The actions of this do not essentially differ from those of the true Spinal Cord; but they are connected with different organs. This part consists chiefly of the centres of the nerves of Respiration and Deglutition,—two functions of which the continual maintenance is essential to the life of the being; and it would seem as if these were placed within the cranium, to be more secured from accidental injury. The movements concerned in Respiration and Deglutition are, like those excited through the true Spinal Cord, of a strictly reflex character, being in all instances due to an impression originating in the periphery of the system, which,

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* "In neither case, however, can the word *terminate* be used with strict correctness; since there is good reason to believe that the apparent termination is not real, but that the ultimate fibres spread from each other in loops, so as to form a plexus, in which there is no loss or cessation of any one of them."

being conveyed to the centre, excites there a motor impulse; and they, also, are independent of Sensation.

III. The Ganglia of the nerves of Special Sensation, which form, as it were, the continuation of the Medulla Oblongata. These, also, appear to minister to actions, which do not differ widely from the Reflex in character,—being almost necessarily excited by certain stimuli, and being only in a degree controllable by the will. But their actions differ in this,—that they are attended with consciousness, and also, it would appear, with certain peculiar feelings. Reasons have been given for the belief, that these ganglia are the centres of those actions, which are commonly termed *instinctive* in the lower animals, and *consensual* and *emotional* in ourselves; these all correspond, in being performed without any idea of a purpose, and without any direction of the will,—being frequently in opposition to it.

IV. The Cerebral Hemispheres or ganglia, which are evidently the instruments or organs of the intellectual faculties. These are connected, by fibres of communication, with almost all parts of the body; and from their proportional size in Man, it seems probable that many of the nervous trunks are principally composed of such fibres. It is probably by them alone that ideas or notions of surrounding objects are acquired, and that these ideas are made the ground-work of mental operations. They would seem, also, to be the exclusive seat of Memory. The results of these operations are manifested on the bodily frame, through the Will, which is capable of acting in greater or less degree, on all the muscles forming part of the system of Animal life.

V. The Cerebellum, which appears to be concerned in the regulation and harmonisation of Muscular movement, whether Instinctive or Voluntary.

Tabular View of the Nervous Centres.

Cerebral Ganglia,
the centres of the operations
of intelligence and will.

Nerves of special sensation. — Motor fibres mingled with general motor system.	Ganglia of Special Sense, the centres of consensual, instinctive, and emotional actions	Nerves of special sensation. — Motor fibres mingled with general motor system.

Cerebellic Ganglia
for harmonisation of general
muscular actions.

Afferent and Motor Nerves of Respiration, Deglutition, &c.	Respiratory and stomato-gastric Ganglia.	Afferent and Motor Nerves of Respiration, Deglutition, &c.

Trunks of Spinal nerves, composed of fibres from true Spinal Cord, and from Cerebrum, Cerebellum, and Medulla Oblongata; each group containing afferent and efferent fibres.	Fibrous structure, continuous with Brain.	True Spinal Cord, consisting of chain of ganglia, for Reflex actions of the trunk and extremities.	Fibrous structure, continuous with Brain.	Trunks of Spinal nerves, composed of fibres from true Spinal Cord, and from Cerebrum, Cerebellum, and Medulla Oblongata; each group containing afferent and efferent fibres.

CHAPTER IV. is on sensation and the organs of the senses. The section on "Sensation in general" is written in a highly philosophical manner. It concludes with a reference to the curious observations of Dr. Henry Holland, relative to the effects of the continued direction of attention on particular parts of the body, as modifying not only their sensations, but, ultimately, also their organic actions. We may notice, in passing, another set of phenomena, of a kindred nature, too little attended to by physiologists; namely, the effects of intense censorial action in exalting the functions of the nerves of special sensation, or at least in exalting the senses themselves—for this may be conceived to arise either from an increase of sentient power in the nerve, or of perceptive power in the brain. For example, it often happens that a person intensely interested in an event, will clearly discern an object which is beyond their ordinary limit of vision; and, in like manner, fear or anxious suspense will render the ear cognisant of sounds so faint, that they would not, under ordinary circumstances, have been perceived.

The sections on Vision and Audition show Dr. Carpenter to be well versed in the branches of natural philosophy, on the principles of which the exercise of those senses depends.

On the cause of erect vision from an inverted image on the retina, he expresses himself as follows:—

"Many solutions of it have been attempted; but they are for the most part rather specious than really satisfactory. That which has been of late years the most in vogue, is founded upon what was styled the Law of Visible Direction, which has been supported by Sir D. Brewster, and other eminent philosophers. This law affirms, that every object is seen in the direction of the perpendicular to that point of the retina on which its image is formed; or, in other words, that, as all the perpendiculars to the several points of the inner surface of a sphere meet in the centre, the line of direction of any object is identical with the prolonged radius of the sphere, drawn from the point at which its image is made upon the retina. Upon close examination, however, it is found that this law cannot be optically correct; since the lines of direction cross each other at a point much anterior to the centre of the globe; as may be determined by drawing a diagram upon a large scale, and laying down the course of the rays received by the eye, according to the curvatures and refractive powers of its different parts. In this manner it has been determined by Volkmann, that the lines of direction cross each other in a point a little behind the crystalline lens; and that they will thus fall at such different angles on different points of the retina, that no general law can be laid down respecting them. It may be questioned, moreover, whether any such law would afford any assistance in explaining the phenomenon; since, after all, it is requisite to assume an intuitive application of it, in supposing the mind to derive its ideas of the relative situations of objects from the supposed line of direction. A much simpler and more direct explanation may be given. We must remember that which we have had occasion to notice in regard to all the other senses,—the broad line of distinction between the sensation and the perception or elementary notion; and this is still more clearly shown by the complete absence of any relation, but such as experience develops, between the perceptions derived through the sight, and those acquired from the touch. Hence there is no more difficulty in understanding that an inverted picture upon the retina should convey to us a notion of the external world, which harmonises with that acquired through the sense of touch, than there is n comprehending the formation of any of those intuitive perceptions of animals, which are so much more removed from the teachings of our own experience,

It is justly remarked by Müller that, 'if we do see objects inverted [or rather, if the picture on the retina is inverted] the only proof we can possibly have of it, is that afforded by the study of the laws of Optics; and, if everything is seen reversed, the relative position of the objects remains unchanged. Hence it is, also, that no discordance arises between the sensations of inverted vision and those of touch, which perceives everything in its erect position; for the images of all objects, even of our own limbs, on the retina, are equally inverted, and therefore maintain the same relative position. Even the image of our hand, when used in touch, is inverted.' From what has been stated it would appear quite conceivable, that a person just endowed with sight, should not at first know by his visual powers, whether a pyramid placed before his eyes is the same body, and in the same position, as one with which he has become acquainted by the touch; and, if this be admitted, the inference necessarily follows, that the notion of *erectness*, which we form by the combined use of our eyes and our hands, is really the product of experience in ourselves, whilst it is probably innate or intuitional in the lower animals." 266.

It seems to us that one of the best solutions of this difficulty hitherto offered, is that framed by Sir Charles Bell on Brown's doctrine of the Muscular Sense. According to this theory, we determine whether an entire object be above or below us, to the right hand or to the left, by our consciousness of the action of that muscle which directs the eye towards the object. In like manner we distinguish the top of an object from the bottom by a consciousness of the action of the levator muscle when we regard the former, and of the depressor when we regard the latter.

It may be objected, that this view will not apply in the case of objects so minute as to require no muscular action to enable the eye to apprehend them, but which notwithstanding, are seen in their true position as well as larger objects. But this objection is invalid; because, although no muscular action be required to enable the eye to take in such objects, yet the smallest elevation of the eye banishes the object, and the point which disappears last is thus known to be the top; while the smallest depression of the eye also banishes the object, and the point which disappears last is thus known to be the bottom; and so on with regard to the movements of the eye from right to left, and left to right, or in any other direction.

It is probable that several causes concur in the production of the result in question; but we have little doubt that Sir Charles Bell's view is at least applicable to a considerable extent. We should be much disposed, also, to refer our notions of *magnitude*, in many instances, to the same cause.

Doubtless, we acquire information on this head from the size of the image formed on the retina; the degree of illumination of the object, and the habit of comparing objects when seen together. Still, it appears to us that these circumstances alone are inadequate to account for our perceptions of magnitude, and that we are greatly assisted in this respect by a consciousness of the degree and duration of muscular action necessary to carry the eye over the surface of an object, or with reference to extremely minute objects, by the consciousness that no such action is required, and that the smallest movement of the eye diverts it altogether from the object. With regard to objects of considerable, but unequal

dimensions, placed at the same distance from the observer, we think it probable the estimate of magnitude is formed almost entirely by the exercise of the muscular sense.

CHAPTER V. treats of muscular contractility. This, like every other subject comprehended in the work, has been ably handled by Dr. Carpenter, but, as it is one on which no great accession of knowledge has been obtained of late years, we pass it by.

CHAPTER VI. is on the voice and speech, and contains an interesting view of the formation of the voice in speech and song, and of the principle and construction of musical instruments, derived chiefly from the investigations of Willis, Müller, and others. The section on Articulate Sounds is a good and practical one, and concludes with the following remarks on stammering :—

"Great as is the number of muscles employed in the production of definite vocal sounds, the number is much greater for those of articulate language; and the varieties of combination, which we are continually forming unconsciously to ourselves, would not be suspected without a minute analysis of the separate actions. Thus, in uttering the explosive sounds, we check the passage of air through the posterior nares, in the very act of articulating the letter; and yet this important movement commonly passes unobserved. We must regard the power of forming the several articulate sounds which have been adverted to, and their simple combinations, as so far resulting from intuition, that it can in general be more readily acquired by early practice than other actions of the same complexity; so that we may consider these movements as having somewhat of the same consensual character as that which has been attributed to the purely vocalising actions. But there is in many individuals a deficiency of the power of rightly combining them, from which stammering and other imperfections result. Many theories regarding the nature of stammering have been proposed; and there can be little doubt that the impediment may be attributed to a great variety of exciting causes. A disordered action of the nervous centres must, however, be regarded as the proximate cause; though this may be (to use the language of Dr. M. Hall) either of *centric* or of *excentric* origin,—that is, may result from a morbid condition of the ganglionic centre, or from an undue excitement conveyed through its afferent nerves. When of centric origin (and this is probably the most general case) the phenomena of stammering and chorea have a close analogy to each other; in fact, stammering is frequently one of the modes, in which the disordered condition of the nervous system in chorea manifests itself. It is in the pronounciation of the consonants of the explosive class, that the stammerer experiences the greatest difficulty. The total interruption to the breath which they occasion frequently becomes quite spasmodic; and the whole frame is thrown into the most distressing semi-convulsive movement, until relieved by expiration.* In the pronunciation of the continuous consonants of the first class, the stammerer usually prolongs them, by a spasmodic continuance of the same action; and there is, in consequence, an impeded, but not a suspended respiration. The same is the case with the *l* and *r* in the second class. In pronouncing the *m* and *n*, on the other hand, as well as the aspirates

* "By Dr. Arnott this interruption is represented as taking place in the larynx; that this is not the case, a little attention to the ordinary phenomena of voice will satisfactorily prove."

and vowels, it is sometimes observed that the stammerer prolongs the sound, by a full and exhausting expiration. In all these cases, then, it seems as if the muscular sense, resulting from each particular combination of actions, became the stimulus to the involuntary prolongation of that action. In some instances it is possible that the defect may result from malformation of the parts about the fauces producing an abnormal stimulus of this kind in some particular positions of the organ; and such cases *may* be really benefited by an operation for the removal of these parts. But the effect of the operation is evidently for the most part upon the nervous system; and it coincides with what may be frequently observed,—that the stammering is increased under any unusual excitement, especially of the emotional kind.

"The method proposed by Dr. Arnott for the prevention of stammering, consists in the connexion of all the words by a vocal intonation, in such a manner that there shall never be an entire stoppage of the breath. It is justly remarked by Müller, however, that this plan may afford some benefit, but cannot do every thing, since the main impediment occurs in the middle of words themselves. One important remedial means, on which too much stress cannot be laid, is to study carefully the mechanism of the articulation of the difficult letters, and to practise their pronunciation repeatedly, slowly, and analytically. The patient would at first do well to practice sentences, from which the explosive consonants are omitted, and his chief difficulty, arising from the spasmodic suspension of the expiratory movement, would be thus avoided. Having mastered these, he may pass on to others in which the difficult letters are sparingly introduced, and finally accustom himself to the use of ordinary language. One of the chief points to be aimed at, is to make the patient feel that he has command over his muscles of articulation; and this is best done by gradually leading him from that which he finds he *can* do, to that which he fears he cannot. The fact that stammering people are able to *sing* their words better than to *speak* them, has been usually explained on the supposition that, in singing, the glottis is kept open, so that there is less liability to spasmodic action; if, however, as here maintained, the spasmodic action is not in the larynx, but in the velum palati and the muscles of articulation, the difference must be due to the direction of the attention rather to the muscles of the larynx than to those of the mouth. Every one must have noticed how much the impediment of stammerers is increased, when they are particularly anxious to speak fluently." 338.

CHAPTER VII. treats of the influence of the nervous system on the organic functions. It is brief, being evidently intended rather to connect other portions of the work than to exhaust the subjects which are commented upon.

CHAPTER VIII. is on Digestion and Absorption. Little that is new can be expected on these heads; our author has, however, given a correct view of the present state of knowledge in regard to them, with judicious dietetic and hygienic applications.

CHAPTER IX. is devoted to the all-important subject of the Circulation, and is divided into sections relating to the action of the heart—the causes influencing the circulation in the arteries and capillaries—the venous circulation—and the peculiarities of the circulation in particular parts. The most important as well as the most obscure, department of the subject in the present state of physiological research, is that relating to the vital endowments of the capillaries and their influence on the passage of the blood through them.

But a few years since, and the capillaries were generally regarded as active agents in the propulsion of the blood, while, by a singular confusion of ideas, they were at the same time regarded as the immediate seat of the ultimate processes of life. But, recent researches into the physical phenomena of life, and the rapid progress of microscopical anatomy, have dispossessed us of both these errors, and induced the belief that the capillary vessels, for the most part, simply conduct the materials for processes which are extra-vascular. The adoption of this belief, however, has led, in many quarters, to a depreciation of the importance of capillary action in the regulation of vital processes. We regard it as sufficiently established that the capillary vessels have no general influence in propelling the blood and that they merely convey it as the material of vital actions over which they can have no immediate control. But have they no direct influence on these actions? Is it a question of no importance whether they do, or do not, by a vital power of varying their diameter, affect the *distribution* of the blood, and its *velocity* in particular vessels—for, according to the common law of hydraulics, its velocity must, *cæteris paribus*, be greater in a narrower than a wider tube? On this question, be it observed, are contingent, not only with what surfaces the immediate materials of vital action shall principally be brought in contact, but, also, the quantity of such materials which shall be subjected to a given vital agency in a given time—which amounts virtually to the *proportion* of certain ingredients in a given vital process.

Dr. Carpenter's views of the subject do not precisely agree with those here expressed; but they differ only with respect to points on which, in the present state of knowledge, our notions must necessarily be too vague to be worth disputing about. The following passage we regard as conveying a correct practical view of the agency of the capillaries.

"Many of the facts which indicate the influence of the capillaries on the amount and rapidity of the circulation through them, have been already adverted to. It is a general fact, unquestioned by any physiologists that, when there is any local excitement to the processes of nutrition, secretion, &c., a determination of blood towards the part speedily takes place, and the motion of blood through it is increased in rapidity; and although it might be urged that this increased determination may not be the effect, but the cause, of the increased local action, such an opinion could not be sustained without many inconsistencies with known facts. For it is known that such local determination may take place, not only as a part of the regular phenomena of growth and development (as in the case of the entire genital system at the time of puberty and of periodical heat, the uterus after conception, and the mammæ after parturition,) but also as a consequence of a strictly-local cause. Thus the student is well aware that after several hours' close application, there is commonly an increased determination of blood to the brain, causing a sense of oppression, a feeling of heat, and frequently a diminished action in other parts; and, again, when the capillary circulation is being examined under the microscope, it is seen to to be quickened by moderate stimuli, and equally retarded by depressing agents. All these facts harmonise completely with the phenomena which are yet more striking in the lower classes of organised beings, and are evidently the results of the same laws.

"If the phenomena which have been here brought together be considered as establishing the existence, in all classes of beings possessing a circulating apparatus, of a capillary power, which affords a necessary condition for the move-

ment of the nutritious fluid, through those parts in which it comes into more immediate relation with the solids,—the question still remains open, as to its nature. That the capillaries possess a contractile power, in a far higher degree than do the large arteries, and more easily excited than that of the smaller, appears scarcely to admit of doubt; though to what it is due, may be reasonably questioned. It has been recently asserted by Schwann, that they possess the same kind of fibrous tissue in their walls as do the large vessels; and this cannot be regarded as improbable. It is not possible, however, that their contractility could have any influence in aiding the continuous motion of blood through them, unless it were exercised in a very different manner from that of which observation affords us evidence. For, when we are microscopically examining the capillary circulation of any part, it is at once seen that the vessels present no obvious movement, and that the stream, now rendered continuous by the elasticity of the arteries, passes through them as through unelastic tubes. The only method in which the contractility of the capillaries could produce a regular influence on the current of blood, would be an alternate contraction and dilatation, or a peristaltic movement; and of neither of these can the least traces be discerned. Hence we should altogether dismiss from our minds the idea of any *mechanical* assistance afforded by the action of the capillaries to the movement of the blood. That the contractile coat of the capillaries has for its office to regulate the calibre of the vessels, can scarcely be doubted; but any general permanent contraction would only occasion an obstacle to the circulation, —as is shown by the effects of stimulating injections, which, if thrown into the vessels before their vitality has been lost, will not pass through the capillaries. It would appear, therefore, to be through their action on this coat, that local stimuli occasion a contraction of the capillaries; their effect, however, is different from what might have been anticipated; for, instead of the capillary circulation being retarded, it is accelerated, at least until an abnormal condition results from their continued operation. Here, again, is another evidence, that something different from mechanical power must be the agent that operates in all the foregoing cases." 416.

CHAPTER X. is on Respiration, and contains a good exposition of the facts of the subject, on which we have no particular observations to make.

CHAPTER XI. on the subject of Nutrition, takes a wide range, and embraces a number of the most important points in general physiology.

These are considered under the heads of, Organisable Principles—the Formation of Cells—the Elaboration of Chyle and Lymph—the Physical and Vital Properties of the Blood—Pathological Changes in the Blood—the Origin of the Solid Tissue—and the Formation of the Tissues.

Dr. Carpenter's observations on these subjects form a good critical review of the statements of physiologists on points concerning many of which our knowledge is recent and very imperfect. He has wisely abstained from controversy, and been content with the enunciation of what has either been ascertained or rendered probable. The extent of the field precludes our entering into any of the subjects adverted to, nor indeed, does our author's method of treating them call for any special remarks on our part. We are in a similar position with respect to,

CHAPTER XII. in which the function of secretion is considered under the heads of Secretion in General—Secretion of Bile—of Urine—of Milk—that of the Salivary Glands and Pancreas—of the Lachrymal Gland

—of the Testis—of the Cutaneous and Mucous Follicles—the Functions of the Spleen and Spura-renal Capsules—and of the Thymus and Thyroid bodies, which, from their general aspect, and our ignorance of their precise office in the animal economy, are usually associated with the glanular organs.

These subjects are handled by Dr. Carpenter in a manner which shows his complete knowledge of physiology in all its departments, and his philosophic disposition to adhere to facts and legitimate deductions—not hazarding hypotheses for the sake of an ephemeral reputation for ingenuity.

In CHAPTER XIII. we find a general survey of the nutritive processes, with some practical applications to medicine, and a review of the subject of animal heat. This chapter is very ably written, and affords evidences of extensive and well-digested information. As an example our author's applications of physiology to medicine, we subjoin the following extract:

"There are many disorders commonly regarded as affections of the Circulation, which evidently consist in reality of a morbid alteration in the Nutritive processes; among these, there can be little doubt that we are to rank Inflammation. Much has been said and written, to very little purpose, respecting the essential nature of this process; it has been attributed by some to disordered action of the vessels, and by others to an injurious impression on the nerves—the fact, that inflammation may occur in tissues which contain neither vessels nor nerves, having been entirely overlooked. The only view of the character of Inflammation that seems likely to account for its phenomena, is that which regards it as essentially consisting in a disturbance of the due relation between the living tissue and the nutrient materials contained in the blood. As to the nature of this disturbance, we know no more than we do of the nature of the relation itself; and the expression must, for the present, have somewhat of a vague and indefinite character. Nevertheless, it is much better to have a dim vision of the true beacon, than to be led astray by the more attractive glare of false lights; and whilst the specious hypotheses, which profess to make the whole subject easy of comprehension, are found to be more fallacious the more they are examined into,—the one just adverted to becomes more satisfactory, the more it can be connected with precise data. That there must be a certain relation or adaptiveness, between the substance of the tissues, aud the materials at whose expense they are formed, appears sufficiently evident. It has been pointed out that the albumen of the blood is converted, during its circulation, into fibrin; and that the fibrin is withdrawn and assimilated by the solid parts. In the tuberculous cachexia, it has been shown that the fibrin is deficient, and that the tissues are consequently nourished but imperfectly, whilst unorganisable albumen is deposited amongst them. On the other hand, in the inflammatory diathesis, there is probably an increased tendency in the blood to the generation of fibrin; and this, by disturbing the due relation between the nutritive fluid and the solid tissues, may become a cause of local disease,—the morbid action which results from this condition of the blood being determined to a particular part by some extraneous causes. In this morbid action, fibrinous matter is effused either into the substance of the tissue affected, or upon its surface; there is a tendency to organisation, but in both cases its degree may vary,—a perfectly-formed tissue being produced, or a degeneration taking place into pus-globules, according to circumstances. Inflammation may result, however, from causes purely local, and primarily affecting the solid tissues; here, therefore, the disturbance of the normal relation is on the other side, yet the production of an increased amount of fibrin is still a character of the disease. Whether the blood moves faster or

slower in an inflamed part.—whether the capillaries are contracted or dilated,—are questions, therefore, of little moment, in comparison with those which affect the actions of Nutrition and Secretion, to which the fluid, in its passage through the parts in question, ought to be subservient. The same may be remarked of those productions which have been termed *heterologous* transformations of tissue; but which are rather to be regarded as new growths, that have appropriated the nutriment designed for the support of the proper tissues, and have therefore become developed at the expense of these. It is quite as absurd to attempt to account for the growth of Schirrus, Carcinoma, &c., by any peculiar action of the vessels of the part, as it would be to attribute the secretion of fatty matter by the cells of one tissue, or of phosphate of lime by those of another, to the peculiar distribution of their vessels. The progress of research obviously leads to the conclusion, that in every part of the living body there is an inherent and independent vitality, which enables it to grow and maintain its normal structure and constitution, so long as it is supplied with the requisite materials; and that changes in the character of the tissue can be referred to nothing else than to alterations in its properties, resulting from external agencies, or to alterations in the materials supplied for its renewal. Of these two morbific causes, the latter is undoubtedly the most frequent; and the tendency which is now gaining ground to seek in the Blood for indications of pathological changes, when there is an obvious general disturbance of the system, will probably lead to a greatly-increased knowledge of the real nature of diseased states; in spite of the opposition which any return to the Humoral Pathology is sure to excite, in the minds of those who regard it as an exploded and pernicious system." 601.

On the subject of animal heat, Dr. Carpenter does not assent to the prevailing chemical doctrine of the day, which assimilates calorification to combustion. He nevertheless takes a chemical view of the process which, in our opinion, is precisely that justified by the facts which are known. "At present," he says, "it may be stated as a general fact, that the production of animal heat is due to the various changes in chemical composition that are continually taking place within the system; of which changes the absorption of oxygen and the disengagement of carbonic acid are the two chief external manifestations:—and that the degree of caloric liberated bears a close relation to the activity of these changes, either in regard to the body at large, or to any portion of it." p. 611.

The concluding Chapter, on Reproduction and the development of the Embryo, contains nothing original, but gives a succinct view of the actual amount of knowledge on these subjects.

We must now take our leave of Dr. Carpenter, and, in so doing, we have much satisfaction in declaring our opinion that his work is the best systematic treatise on Physiology in our own language, and the best adapted for the student existing in any language.

Periscope;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

Notices of some New Works.

On Spasm, Languor, Palsy, and other Disorders, termed Nervous, of the Muscular System. By *Arthur James Wilson*, M.D., Physician to St. George's Hospital. 8vo. pp. 200. Parker, Strand, 1843.

This is the product of a talented physician, who has (and who has not?) some peculiar opinions—especially respecting the blood. The little work is dedicated to the memory of his father, the late James Wilson, Esq. whose accurate anatomical knowledge will long be remembered by those who studied in Windmill Street, at the beginning of the present century.

Our author considers that the muscular fibre—"the ever busy self-moving fibre," has been too much overlooked in tracing the pathology of diseases, in the same way as the state of the blood was neglected. One cause of this neglect, he thinks, is the fact that muscular structure does not present such evident changes after death, as glandular and other structures. The muscles, too, have been despised, as being entirely excited by the nerves supplying them.

"From within, as from without, from the air we breathe, from the food we swallow, as from the inmost recesses of the most distant structures, there is a channel by which, more directly than by its nerve, most of what influences the muscle is received into its fibre. It is by the continuous universal blood, which, while it bathes the fibre, touches the air and mixes with the food—it is by the blood in mass and in current, that the muscle maintains its great and constant relations with the external agencies of matter as with the elementary texture of every organ in the body.

"Let us, therefore, in the inquiry we propose, be content to approach the muscle with the material of its circulation, rather than from the distant sources of its so-called 'nervous energy.'

"In rational medicine, as in the physiology of health, the blood, we shall ever find, is our one helping clue. From the blood deficient, from the blood in excess in the muscular structure, a prejudice to its function invariably follows. Spasms, the most frightful, may be induced by the addition of certain principles to the blood; and from the absence of others, the faculty of self-contraction in the fleshy structures may be entirely suspended.

"In the explanation of such agencies of the blood upon the muscle, there is no need for the intervention of the nerve. The effects are direct upon the muscle; and, therefore, upon the nerve, as being one of the parts of its entire organized structure. States of the muscle are necessarily implied by states of the blood. And upon the blood, let it be remembered, not only in the composition of its material, but upon the blood organized and discharging functions many and various; upon the blood in its 'habits as it lives,' the muscle is made

to depend. Its lively function at once ceases under any great vice of the blood."

Our author goes on to say that, as the blood influences the muscle, so the muscle, in its re-agency, influences the blood. The muscle is not to be considered as merely the organ of motion, but "collectively and in the mass, as the most extensive of living structures," constantly acting upon and "elaborating the great common material of the body, and preparing it for circulation elsewhere." Dr. Wilson gives his definition of "MUSCLE" as "the living flesh, in its combination of many parts, with the blood predominant in all;" and by muscular action, he "never means less than a result of the triple agency of nerve and fibre with the blood." There is a depth—perhaps a certain degree of obscurity—in some of Dr. Wilson's reasonings or theories, which induces us to pass on to their application to practice or facts.

"In the practical application of these principles to the treatment of muscular disorder, we find that great advantages are actually obtained by addressing our remedies to the muscle through the wide current of the blood that pervades its entire texture, rather than by seeking to influence the structure through the exclusive agency of its nerve. Medicine and disease work, it is ever found, on the same living materials by the same means of living action; and thus it follows, that sometimes by extending the supply of blood to the muscle, sometimes by reducing it, by removing hurtful principles from the circulation, or by restoring those which are inherently wholesome, we do in truth best control the symptoms of muscular disorder."

The disorders, he observes, incidental to the voluntary muscles, are principally expressed by undue violence or contraction—by slowness or irregularity of movement—and by suspension of motion. Cases, he avers, of palsy and chronic spasm, "hopeless, if assumed to depend on organic disease of the brain or spinal marrow, are not unfrequently cured," by means addressed to the blood and its purification. In such cases, large bleedings ("the routine practice of the day") and "strong mercurial poison" are, of course, condemned.

"Even where the muscle is least in fault—when its function is impaired by lesion, not of its own structure, but of the brain or spinal marrow—even under these effects of distinct and distant nervous injury, we must in our management of the case still depend on the blood for all that we hope to secure of improvement in the muscle."

Our author makes several apt remarks on the state of the voluntary muscles in various diseases. Thus the poison of fever, through the medium of the blood, soon prostrates the strength, and affords important indications in the way of prognosis. The expression of the countenance, on which we so much rely, is formed entirely by the state of the muscles. "In the convalescence of fever, the restoration of the muscular power is the completion of recovery."

Spasm.

This is, as Dr. W. observes, a vague term in medicine. It is applied to the involuntary muscular fibres, as well as to the voluntary—nay, it is applied to structures where no muscular fibres have yet been demonstrated. Dr. W. however, applies the term "spasm" only to those muscles which are under the influence of the will.

"It is not, however, by organic disease of the brain, or by tumours pressing on the nerve, that spasm is for the most part explained. The worst forms of spasm seem to have least to do with the nerves of the affected muscles, and are compatible with the soundest state of their structure. Indeed, when spasm kills, we rarely learn, by dissection of the 'Nervous System,' how death is brought about.

"On the other hand, large portions of the brain or spinal marrow may be slowly disorganized with no effect of spasmodic contraction in those muscles of which the nerves are continuous with the damaged portion of the medullary column."

Spasmodic affections at the commencement of fever, are often indicative of an eruptive complaint, as all experienced practitioners must have observed.

Dr. W. confesses that he cannot easily account for cramp or true spasms; but, in his own practice, has always found it accompanied by some "constitutional disturbance." He will not admit the theory that cramp depends on "pressure or irritation of the nerve of the affected muscles," or from sympathy with other nerves.

"It is from what offends the blood in the fibre, that spasm of the voluntary muscles is for the most part induced. By no contrived irritation of the ganglionic nerves can we directly induce spasm in the voluntary muscles; let, however, but a few drops of the solution of the extract of the nux vomica be injected into the current of the living blood, and tetanus is the certain result. There are no cramps so severe as those of which poison mixed with the blood is the direct cause. Can we refuse the inference, that always in the muscles, when thus disturbed, there is a prejudice of the blood by composition or in function;—and by the blood's function how much is implied!—how much more than the little we know of it by its material composition, or in its mechanical relations! This has not been enough considered. The blood not only lives, but its life predominates over that of all else in the system."

The sense of weight and constriction under the ensiform cartilage, together with the anxiety and other sensations during a paroxysm of "spasm in the chest," (we suppose Angina Pectoris) give evidence, our author thinks, that the blood is in undue volume, or of unfit quality in the large vessels.

But we have followed our author through a host of spasmodic affections, on which he descants, but so often in a mysterious language and phraseology, that we confess ourselves unable to fathom his meaning on many occasions. That he attributes the wide class of ailments, referred to in this volume, to some morbid condition of the blood, we think is clear; but what that morbid condition is, or how it is to be remedied or prevented, we have been unable to learn from the author himself. Clearer and abler heads than ours may, probably, derive sound precepts and important information from Dr. Wilson's volume, and to them we recommend its attentive perusal.

We shall give one more extract, and it is one of the least equivocal in the volume.

"The mind is educated with the muscle,—lives with it, and by it; and in the body never survives its death; but muscle is not therefore mind. The beasts that perish have muscles like ourselves. That in man the mind should conform with, and be dependent on matter, is the law of his probationary existence. As a compound being, on the Creator's design, he is fashioned, taught, and tried. To distinguish mind, in man, from matter, is to unmake the man.

"It is a common error with divines, and much scandal has arisen from the impossible attempt. Man's mind is not a necessary, or fortuitous result of his material life, but an imposed condition of its tenure. It is dependent, as we have seen, at all times, on the muscles for its expression. Mind, if anywhere in the body, is everywhere. How grossly do they err, who, fearing to acknowledge its close, constant, and entire connexion with every drop and particle of the living human frame, would limit its residence to certain parts, as to the brain!

"But, if thus localized in the brain; in which brain? for there are two; in which lobe, chamber, or convolution of the brain? for there are many. The brain is but the central union, by double junction, of all the nerves of all the

muscles; an appended system of parts, with partial relations, by function, with other structures, and capable of common influences, only through the blood. It, the brain, may, in truth, be regarded as the lungs of the nerves; for in the brain, the nerves are spread out, universally and simultaneously, to the blood, fresh, full, and ventilated from the aortic heart. Without the adjuncts of blood and muscle, we cannot get a notion of the brain, either in structure or function.

"Thought and Memory attach to the brain, only as representing the several organs of the body, in combination, by their nerves. There is no more thought in one part of the brain than in another; than in the muscle, whose nerves are there expanded, or in the blood, of which the brain in all its parts consists. On the triple relation of blood and brain, by nerve, with the fibre, the expression of thought is made, in the muscle, to depend; and of thought, in its physical operation, this is all that we are permitted to know.

"That the soul, by which we feel and think, is essentially, now, and for ever, distinct from blood, brain and muscle, we are assured by a Law, which is not of the flesh. And yet, by the flesh, is the law to us made manifest. It has been written, spoken, acted,—still, by those muscles which have been our theme, and from which we now with awe retire. That the Word might to Man be Light, it became itself incarnate."

NUMEROUS CASES OF SURGICAL OPERATIONS, WITHOUT PAIN, IN THE MESMERIC STATE; with Remarks upon the Opposition of many Members of the Royal Medical and Chirurgical Society, and others, to the reception of the inestimable blessings of Mesmerism. By *John Elliotson*, M.D. 8vo. pp. 93. Bailliere, 1843.

THIS pamphlet is generally denominated "Dr. Elliotson's farewell to the profession." We are sorry to see it, for it is probable that before Dr. E. dies he will regret its publication. We never heard any one deny the talents, abilities, and industry of the author; but genius is very often allied to eccentricity—and the latter not seldom borders on delusion. There is no doubt that Dr. E. firmly believes in the truth of Mesmerism; but he ought to recollect the maxim of Hippocrates—"Judicium difficile experientia fallax." If experience be often fallacious, how much more so is *experiment?* When the generality of mankind differ from an individual on some particular point, it is a strong presumption that the individual is wrong, and he had better give way. Instead of this prudent step, the Mesmerist immediately points to Galileo, Harvey, or Newton,—forgetting the hosts of enthusiasts who considered themselves Galileos, but whose doctrines are now consigned to oblivion with themselves. Galileos, Harveys, and Newtons, are not the products of every year—nor of every century, whereas visionaries are as plentiful as blackberries, and often as transitory as that sable fruit. But, say the Mesmerists, "we have disciples among the highest and most learned classes of society." As for the *higher* orders, they are ten times more gullible than the middle classes—and among the learned, there will always be found credulous and superstitious individuals. Johanna Southcote did not want *believers* among the better classes of society. Even DOCTORS asserted that they felt the young Shiloh skipping about in the womb of a sexagenarian and flatulent old hag.

There is no question, as we before said, that Dr. Elliotson is sincere in his faith; but how he can so far blind himself as to suppose that Mesmerism, *if true*, would be an inestimable blessing to mankind, we cannot comprehend! What! the power, (not limited to the faculty, but open to all,) of casting man,

woman, or child, into such a miraculous trance that their legs may be amputated —their teeth drawn—needles pushed into their flesh—ammonia inhaled—their jaw-bones cut away—without the slightest consciousness on their parts!! Why such a power transcends that which was ever laid claim to, by any necromancer or magician that ever lived! If these faculties or powers were real, we ask Dr. Elliotson, what man's life or woman's virtue could be safe from the witcheries of the Mesmerist, in any part of the globe? Dr. Elliotson will, doubtless, answer, that the faculty and the public at large, have *now* arsenic, corrosive sublimate, and prussic acid, which they may convert into poisons, though generally used as remedies. Softly, good Sir! It is not quite so easy to thrust arsenic down a person's throat, as to lay him or her fast asleep by a few passes of the hand—whilst the act of poisoning is more easily detected than that of mesmerizing—and the penalty would be a swing at Newgate. Notwithstanding, the dreadful pains and penalties against poisoning, have we not daily examples of these crimes being practised, even at the risk and often the expense of the criminal's life?

And if the miraculous power of transferring vision to the epigastrium, audition to the patella, and a knowledge of distant events to a person sound asleep in Dr. Elliotson's library, can be effected by waving the hand over the face of an individual, in what utter contempt must we not hold the paltry miracles of Holy Writ?

But we must proceed to take a short notice of the pamphlet before us. Dr. Elliotson, like a prudent Chinese general, fires off his great gun at the commencement of the battle, in order to frighten the barbarians and put them to flight at once. This large piece of ordnance is levelled at the Medico-Chirurgical Society and its members, since a demolition of that body would clear the way for a triumphant march to the mesmeric corps. The style and taste displayed by Dr. Elliotson in this literary warfare, are anything but creditable to himself. But upon this point we will not trust ourselves to comment. We shall quote a passage from our contemporary, the PROVINCIAL MEDICAL JOURNAL, which may show Dr. E. the opinions which are entertained on the subject in question.

"Not content with exposing fully to his own satisfaction, at least, the opposition to the doctrines of mesmerism, he fastens upon the speakers themselves, and leaves them not until he has told us that Dr. Johnson is a reviewer—that Messrs. Liston and Wakley are now inseparable friends—that Dr. Roots is a physician, living in Russell-square; and not yet satiated, he animadverts alike upon his professional brethren, their pursuits, and their very houses; and hovering about for some farther object, he at length finds a climax in the 'two very large brass plates of the M.D. in Hill-street.'

"Weak indeed must be the argument that can need support such as this; every man must bring disgrace upon himself and the opinions he endeavours to uphold, by such discreditable means. Careless, as it would seem, alike to all claims of good feeling and good taste, and in apparent eagerness to make his attacks as unjust as vituperable, he hurls still direr weapons at the heads of those who have taken but little part in the discussion of his opinions. One of these he apostrophises as, 'Ungenerous man! I envy you not your heart!'—Are there no passages, we would ask Dr. Elliotson, in his book which will deservedly draw down upon himself from the lips of every professional brother, the epithet he has thus unhesitatingly applied to another? Heedless of such reflections, and reckless of whom he attacks, the grave itself affords no shelter to its mute tenant; and Sir Astley Cooper is for the first time described as having been 'but scantily informed, and endowed with but a moderate degree of the higher intellectual faculties.'"*

* Provincial Medical Journal, April 29th, 1843.

The great gun, to which we have alluded, is, of course, the mesmeric amputation; and the truths of mesmerism are grounded, first, on the wonderful improvement which the patient experienced in the hospital, while being mesmerised—anterior to the operation—and, secondly, his insensibility to pain during the amputation itself. It is to be remembered that the patient was a labouring man, who had suffered from diseased knee-joint for five years, and was obliged to "earn his bread by the sweat of his brow," up to the time he was admitted into the hospital of WELLOW. Now, would any man but a mesmeriser fail to perceive that the comforts, quietude, and proper remedies of an hospital, would work an immense change in the general constitution of a patient, snatched from the plough-tail with diseased knee-joint, and placed in the ward of a public institution—independent of the pokings and pawings of Barrister Topham? Well! He was mesmerised daily—and perhaps "*something more*"—with improvement of general health. Here we ask the Barrister and his dupes, why he did not *cure* the disease of the knee-joint? Was it more difficult to anchylose that said joint, than to change an umbilicus into an eye, or an olecranon into an ear? But the mesmerisers well knew that is was far easier to induce a peasant to feign a sleep, than to feign the cure of a disease whose existence would still be patent to the world. They therefore determined to amputate. What was the mode of training for the operation we shall not determine. The surgeon, strange to say, was absent from his duty, and the Barrister had charge of the patient!! After no small number of mesmeric passes, the peasant assumed the appearance of coma, and underwent amputation—not, however, without evincing signs of the agony he suffered, or the greater agony of suppressing his sufferings! "A low *moaning* was head at intervals until the conclusion of the operation?"

Dr. Elliotson appears to have adopted the maxim "de non *apparentibus*, et non *existentibus* eadam est ratio." Now, however this may hold good in physics—and even *there* it is not always to be relied on—it will prove a most erroneous dogma in morals or metaphysics. Where is the *appearance* of deadly hatred and determined revenge, in the gracious smile and loving embrace of the courtier? And yet the most diabolical passions are masked under the appearance of Heaven-born benevolence! Did the Prelate, who held his hand in the fire, till it was reduced to a cinder, as a punishment on the member for signing a bloody document, *feel* no pain, though he evinced no *sensation* of it? But even if Mesmerism did obliterate the sensation of pain in a surgical operation, we would not accept the boon. Nature has given to every created being that possesses a voice, a language to indicate pain, and the suppression of that language is injurious. Smothered or concealed feeling, either of pain or sorrow, is almost invariably inimical to healthy function.

Like most deceptions or impostures, the case of James Wombell proved a great deal too much, as was shewn by Dr. Marshall Hall, Sir B. Brodie, and others. The unamputated limb, if the man had been asleep, and consequently had no *voluntary* power over it, would have started the moment the incision was made through the skin, and still more strongly when the nerves were pinched. The deception, therefore, betrayed itself, and it is clear that neither the operators nor the patient had studied the "reflex function."

The great gun, then, being proved to have had no shot, but merely wadding, we shall take no further notice of it. The greater portion of this pamphlet is taken up with comments on the Medico-Chirurgical Society, and such of its members as took part in the discussion. These remarks we shall leave untouched. Dr. Elliotson will, one day, regret that he has given way to his feelings, and indulged in personalities, which always damage a philosophical argument.

Some of the minor proofs of Mesmeric truth are not a little curious. Mrs. Valiant's nursery-maid figures among these. She was prepared for a painful operation by Sir Thomas Willshire. In six minutes she was asleep, and could *not* hear the loudest noises; but when Sir Thomas took her hand and spoke in a

low voice she *heard*, and answered that SHE WAS ASLEEP AND COMFORTABLE"!!! "She opened her mouth for the operation to be performed at the command of the Mesmeriser." "Sir T. took some wine, while the patient went through the form of tasting and drinking; and, on being questioned, said she tasted wine:—the same experiment was tried with a piece of biscuit, and she said she tasted the biscuit." All this, too, when in such a profound Mesmeric coma as to have her jaw cut away without feeling the operation!!!

When such transcendental absurdities are published as proofs of Mesmeric truths, we give up all argument in despair. We might as well expostulate with the waves that chafe upon the solid rocks or idle sands. Dr. Elliotson remonstrates feelingly against the uncharitable and unchristian practice of *suspecting* poor innocent females of deception. Alas! the history of mankind presents little else than a tissue of deceptions and crimes. We wish the worthy Doctor was a little more suspicious himself! At the same time, we freely admit that HE is, beyond all comparison, the most honest and the most talented of the whole sect of Mesmerisers. But no man is without a weak point—and unfortunately where there is a weak point, *that* is considered by the owner as the most impregnable portion of his intellectual or moral system. We have not the slightest doubt that Dr. Elliotson as firmly and sincerely believes in clairvoyance and transposition of the senses, as the Pope believes in transubstantiation—the Jew in Exodus—the Christian in the Crucifixion—the Turk in the Paradise of Houris—or the Hindoo in VISHNA and SEEVA.

THE AMERICAN JOURNAL AND LIBRARY OF DENTAL SCIENCE. New-York and Baltimore.

WE have received the first Number of the second Volume of this quarterly Journal published in New-York and Baltimore, under the auspices of the American Society of Dental Surgeons—"the only regularly organised and extensive association of dental surgeons in the world." Our Transatlantic brethren have fairly got the start of the Old Country, and we may say of all Europe, in this respect, and much praise we give them for their energy and zeal. We cannot indeed wonder much at this, after reading the soul-stirring oration of Dr. *Soly-man Brown*, at their last annual meeting, on the Pursuit of Professional Eminence. It may be a little too magniloquent in parts for our phlegmatic tastes; but where is the man whose ambition and thirst for fame will not be kindled by a fervid appeal to the names of Columbus, Milton, Cicero, Buonaparte, Wesley, and Washington, he "who unfurled the banner of universal freedom on the castellated battlements of the world!" The writer points out with great force of illustration the necessity of a man, if he aims at distinction in dental surgery, or indeed in any pursuit whatever, devoting himself to that sphere of life for which he is best suited by his natural qualifications. "Let every individual," says he, "who indulges the ambition of rising to professional distinction, see well to it that he is not a Mercury attempting to handle the thunder-bolts of Jupiter; for although the former was one of the accredited Gods of Olympus, when he burned his fingers (!) he was meddling imprudently with the attributes of another."

Scarcely less eloquent is the opening address of the President of the Society, Professor *Hayden*. We wish much that we could spare room at least for the peroration; but perhaps it is just as well that we cannot; as the unsatisfied curiosity of our readers may induce them to purchase the Journal for themselves.

From the second article in this number, a Dissertation on the Management of the Mouth and Teeth, by *L. S. Parmly*, M.D. D.D.S. (we suppose these last

initials stand for Doctor of Dental Surgery) we select the following two extracts, as practically interesting:—

"There is no truth better understood, and there is none which every day's observation more clearly proves to medical men, than that the loss of teeth is greatly augmented since the introduction of knives and forks, by which the daily friction upon the enamel has been lessened."

How far medical men in this country may approve of the following directions, we shall not take upon ourselves to determine:—

"As soon as the teeth (of an infant) make their appearance, it should be the duty of the nurse or mother to clean them morning and evening with a small brush and water; and, as they increase in number, floss-silk, flax, or hemp well waxed* should be regularly passed between them, moving it up and down a little under the gum, not only for the purpose of removing accumulations (surely these must occur unusually soon in American infants,) but also to give a fine polish to the enamel, which is the natural protection of the bone and beauty of the teeth."

We most cordially wish every possible success to our enterprising *confreres* on the other side of the Atlantic, and will always be most happy to notice their labours when submitted to our review.

De l'Idiotie chez les Enfans, &c. Par *F. Voisin*. Octavo, pp. 122. Paris, 1843. Bailliere.

This brochure contains eight articles (most of them of old date and now republished) on several questions connected with insanity—using that word in its widest acceptation. There is exceedingly little novel or instructive matter in any of them; and we shall not therefore occupy space, that can be more profitably employed, with an analysis of their contents. M. *Voisin* is an ardent phrenologist, and his writings are imbued with a strong bias to examine all the varieties of mental aberration on cranioscopic principles. He seems to be of opinion, that in the greater number of criminals the brain is badly developed; for he tells us that out of five hundred young prisoners whom he had inspected, "two-thirds, of them, so far from being liberally endowed by Nature, have been more or less disgraced (disgraciés) by her, and are suffering the penalty of an incomplete organization. Without being reduced to an intellectual, or, properly speaking, a moral idiotcy, they are unquestionably below the average standard of organization, and exhibit very distinctly the impress of their mutilations. The brain in these persons is at the *minimum* of development in its anterior and superior portions—those very portions which make us what we are, and raise us above the brutes."

We dislike the spirit of such language as this. That the intellectual and moral endowments of different men differ not a little, quite independently of education, we are ready to admit; but we can never bring our minds to allow that the majority of criminals are so irresponsible for their actions as the phrenological doctors would wish us to believe. What think our readers of the following passage? "May not a person have more or less intelligence, and yet be affected with an idiotcy in his moral sentiments? There are not wanting many examples of individuals who, either from a *vice* of nature or of education,

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* In a subsequent note we are informed that these and all other materials requisite for a dentist are kept for sale by Dr. *Solyman Brown* of New-York, the co-editor of the Journal.

seem to be utterly destitute of all goodness, justice, nobleness, and veneration. With regret I must acknowledge that even in our social hierarchy, there are several characters who appear to be only intelligent (not moral) animals." This doctrine, it seems to us, may be said to contain about one grain of truth in a bushel of error. But let us not shut our eyes to the good points in M. *Vousin's* reasonings: witness this extract.

"It is by working in this direction, by overstepping those lines of demarcation which pride and ignorance have set up between man and man, by studying the brains of individuals and of nations, by disclosing their organization, by shewing that they are all made upon one model, by placing on the same line, as to their intellectual and moral faculties, alike the Negro and the European, that science may yet have to rejoice in giving a firm basis to morality, or at least in consecrating some of its best principles. It justifies the elegant pleadings of those gifted men who, being far a-head of the age in which they lived, have deemed it their sacred duty to consider the whole human race as one family, and to claim for every one alike equal liberty, justice, and protection."

ELEMENTS OF GENERAL PATHOLOGY. By the late *John Fletcher*, M.D. Edited by *John J. Drysdale*, M.D., and *John R. Russell*, M.D.

WE gave some account of the two first divisions of this work in the 74th number of this Journal, and we now proceed to offer a few remarks on the third and last, or therapeutical part. This need not detain us long; for it is very meagre, and contains scarcely anything of novelty or of practical importance. Dr. Fletcher had evidently but little experience in the practice of medicine. The shortness of his professional life, and his multifarious engagements as a teacher of anatomy, physiology, &c., precluded him from that intercourse with the bed-side of the sick, which is essential to a proper appreciation of the effects of remedies, or to their adaptation to the various symptoms and shades of disease. In former ages no subject relating to medicine occasioned such constant warfare as the question whether the practice of physic should be founded on principles of reasoning, or on experience alone. The good sense however of modern times has shewn, that to form the accomplished and successful prescriber, it is necessary that scientific research and inductive reasoning must go hand-in-hand with observation and experience.

The great attention that has of late years been paid to the study of morbid anatomy and pathology, has wonderfully advanced the science of medicine, and rescued it from the stigma of empiricism formerly attached to it. In no department of science has there been greater progress made than in that of physiology and pathology. The functions of the living body when in health, or when influenced by disease, as well as the products of this diseased action, are now well understood, and we are indebted to the author of this work and to similar writers for much of our information on these subjects. We apprehend however that a knowledge of physiology and of disease—its symptoms and its consequences—has advanced with more rapid strides, than (what should be the aim and end of all medical inquiries) an acquaintance either with the means of prevention, or of cure. Whether the examination of morbid lesions and structural changes after death, by demonstrating their incurability, tends to diminish confidence in the efficacy of medicine, or whether the art of prescribing be held subsidiary to that of prognosis and diagnosis, there is but little doubt that the most accomplished physiologists and pathologists have not been always the most successful practitioners; and that we are indebted to observation, or perhaps to chance, rather than to pathology, for most of our successful therapeutical agents. Dr. Baillie,

whose intimate and profound knowledge of the functions of the human body, both in their healthy and morbid state, enabled him to discriminate disease, and to foretel the result, with a precision before unknown, was said to be not fertile in his remedial resources. The science which taught him to predict the event, shewed also the inefficiency of human means to avert it, and thus perhaps, in some degree, paralysed his efforts; feeling that nothing effectual could be done, he did nothing.

The facilities which are afforded on the Continent for the prosecution of morbid anatomy, and the zeal with which it is studied, have advanced with very rapid steps the science of pathology; but, as in this country, we much question whether the cure of diseases has made similar progress. Indeed, on reading the works of foreign medical writers, particularly the French, one cannot fail to be struck with the accurate detail of symptoms—the clear, distinct, and true diagnosis and prognosis—and the general inertness, and inefficiency of the remedial measures. Diseases seem to be left to run their course to display the diagnostic skill of the practioner, and to furnish materials for the morbid anatomist and pathologist.

What we contend for is simply this—that an exclusive direction of the mind to anatomical and pathological pursuits, has a tendency to lead, and does in fact lead, to routine and inert practice. In proof of this we may refer to the works of many of our best pathological writers. Indeed nothing can illustrate our meaning more strongly than the therapeutical part of Dr. Fletcher's book; for, whether we regard the prophylactic or remedial measures, it is below mediocrity. It exhibits a sad contrast to the former parts of the work, which we had before great pleasure in recommending to the notice of our readers.

In explaining the mode of action of medicines in general, Dr. Fletcher has recourse to the same theory by which he accounts for the operation of morbific agents, viz. "*the specific nature of their stimulus.*" "It has," he says, "been sufficiently shewn that every organ of the body has a peculiar kind of irritability, adapting it to be acted upon by certain stimuli more remarkably than by others: and that it is owing to this peculiar susceptibility in certain organs, of certain impressions, that particular exciting causes, *e. g.* contagions, however applied, produce always particular diseases; and precisely the same explanation must be given of the more or less specific action of all medicines. Not only every class of medicines, but every individual medicine may be with great reason presumed, like every other agent, whether salutary or deleterious, to afford a stimulus more or less distinct from that afforded by every other. When received into the body therefore in any way, each will be comparatively inert with respect to all those organs to the peculiar irritability of which this stimulus is not adapted, and will act only or chiefly on those which are calculated to feel it, and this equally whether the medicine operate directly on the latter, or applied to some other organ, produces there such an irritation as, being conveyed by certain nerves to the organ upon which it is more properly to act, brings about its specific effects, in other words, operates by sympathy."

It is scarcely necessary to point out the inconclusiveness of this kind of reasoning, or its inadequacy to explain the operation of many of our best remedial agents. It is also in opposition to those doctrines of the humoral pathology which it has been the object of many of our best recent writers to establish on a more sound basis, and which explain much more rationally and satisfactorily the action of medicines. We took occasion, in our notice of the former part of this work, to object to some of our author's theories as to the cause of gout and other constitutional ailments; and the exceptions we then made will apply here. In carrying out his favourite notion, that irritation and sympathy are the almost universal causes of disease, he can see no other effect of medicine than that of producing irritation, and in this sense revulsion.

His views assimilate very much with those of Hahnemann, and, from the long

and explanatory note of the principles of homœopathy, which the editors have appended to the text, we are led to infer that they have taken up, and cultivate this modern system of medicine. They have also given in a note, an account of the "wasser-cur," or hydropathy, as it has been waggishly termed. This still more recent and simple method of treating disease seems, from its present popularity, likely to supersede the more mysterious system of homœopathy: and will probably continue in vogue until some individuals of consequence fall victims to it; or it be in its turn supplanted by some other vagary.

OBSERVATIONS ON THE EXTRACTION OF TEETH. With Plates. By *J. Chitty Clendon*, Surgeon-Dentist. 12mo. pp. 80. Four Plates.

THE objects of Mr. Clendon, an able and successful surgeon-dentist, are best explained in his own words.—

"Although many works on the Teeth—characterized by various degrees of excellence—have issued from the press during the last twenty years. I am not aware of any having a distinct reference to the branch of Dental Surgery, which forms the subject of the present treatise.

"In the works above alluded to, the natural history and diseases of the teeth—the preventive and curative means usually employed—the various operations which diseases in those organs render necessary—and even the most approved methods of supplying the deficiencies they occasion, are all dwelt upon and generally treated with great ability. But, however serviceable these records of experience and research may prove to those who make this department their sole study and occupation, they are far too elaborate, and embrace too great a variety of subjects to interest, or be read by nineteen-twentieths of those on whom the operation of extraction usually devolves, and who—in reference to the teeth—seldom or ever perform any other. The consequence is, that while in every branch of the profession, both surgical and mechanical, which comes under the notice of the professed dentist, great progress and improvement have been made, the extraction of the teeth—the most frequent and painful of all operations—as far as the bulk of the practitioners is concerned, has remained stationary,—the same errors, the same prejudices, and I fear I must add, occasionally the same unfortunate results, that formerly distinguished it, still, continuing to attend its performance.

"To supply this defect and remedy these evils, by submitting to the consideration of the numerous class of practitioners I have referred to, in a plain and distinct form, a knowledge of the safest and most approved method of performing the operation—a knowledge which is the result of a careful consideration of the subject, and confirmed by experience,—is the object of the present work."

And a very laudable and disinterested object it is—placing as it does in the hands of the profession those mechanical means and appliances which a more selfish spirit would have sought to confine to the individual, or his class.

Mr. Clendon thinks, of the key instrument, that it is often *difficult* of *application*, *unscientific* and *uncertain* in its operation, and always productive of *additional pain* and *subsequent inconvenience*.

Now as the key instrument is the one in most general use by practitioners, we think it would be no bad thing to allow Mr. Clendon to state the main objections to it.

First, he shews, as every body who has drawn teeth with it knows, that it is difficult of application.

"Before the instrument is applied to the mouth, it is first of all necessary to examine the tooth attentively, in order to determine the size of the claw to be

used, the side of the tooth on which it will secure the firmest hold; and the space required between the edge of the claw and the fulcrum, so that they may act in a line as nearly parallel to each other as the principle of a lever will admit of. The two former points may be disposed of without much difficulty, but to decide the latter the nicest judgment will be required, for if the space in the *least* exceed the width of the tooth, directly the instrument is brought into operation, the fulcrum will inevitably travel from its position in an increased degree, and thus occasion loss of power; while the pressure and risk of breaking off the crown of the tooth, or fracturing the socket, will be considerably increased. On the other hand, should the space not prove sufficiently wide, the edge of the claw will be far distant from the line horizontal to the fulcrum; the effect will therefore be the same as if the latter had slipped below its proper position. To withdraw it from the mouth, to increase or diminish the space and re-adjust the instrument, under either of the above circumstances, is now the most proper course; but to do so would occupy very critical time and shake the confidence and perhaps the resolution of the patient—the original error, although by far the greater of the two evils, is therefore persevered in

"The difficulty of forming a correct estimate of the space required, is sometimes increased by the tumefaction of the gum, occasioned by alveolar abscess; or gumboil, occurring near or on the very spot the fulcrum should occupy; to place the instrument properly it is necessary to allow for this, yet the moment pressure is applied, the space sensibly diminishes, and the fulcrum slips in proportion."

Frequently, the face and mouth are so inflamed and swollen, that the latter cannot be opened sufficiently for an accurate examination; so sound teeth have been removed for bad ones.

Secondly, the action of the claw is unscientific.

"The action of the claw was no doubt intended to *raise* the tooth from the socket, and most persons who use the instrument persuade themselves that this effect is produced;—a little reflection will very soon show the error of such conclusion. To lift a tooth without doing violence to the socket in which it is placed, the necessary extractive force must be applied either in a *perpendicular* or in an *oblique* direction; the want of sufficient space and risk of injury to the antagonist teeth will generally prevent the former, and to accomplish the latter, the sweep taken must be in proportion to the length of the roots and their position in the socket. Now the edge of the claw in turning describes the segment of a circle whose diameter is far too small to admit of the tooth being raised obliquely: the moment pressure is applied to the handle, the fulcrum turns abruptly on its bearing, and drags the claw in a parallel direction, the effect of which is to cant or upset the tooth—the claw itself preventing the former from rising over the edge of the socket

"By removing the tooth in this lateral direction, the *natural* obstructions are very much increased, and from causes which I will presently explain, although they will perhaps be more readily understood by referring to the diagrams.

"If we suppose the crown strong enough to sustain a force adequate to remove the tooth, the claw in the first instance will press it against that part of the alveolus on which the fulcrum rests, while the latter, by its own pressure, in a great measure counteracts the effect produced by the claw, as it not only forces the alveolus against the roots, but prevents the former from yielding so as to afford a passage for the escape of the tooth; at the same time the extremities of the root press on the opposite side of the alveolus which offers an effectual resistance, and it is only when the fulcrum has turned sufficiently to allow the socket to break away, that the tooth can possibly be removed. When the latter is very firmly fixed, and the crown proves unequal to bear this lateral pressure, it will assuredly break off at the neck, a consequence the more likely to ensue, as the claw, however low it may be thrust, has a tendency, from the motion of

the instrument, to rise, until it catches the ridge formed by the terminal line of the enamel."

"As the teeth, from their peculiar structure and from disease, are more or less brittle, and will not bend to the sweep of the claw, they are consequently very liable to be broken,—and in those cases, where the crown is strong enough to sustain a pressure which will overcome the resistance of the roots, the socket must necessarily break away before the tooth can follow in the direction of the claw. Hence it is, on extracting with the key, a portion of the alveolus is so often found attached to the side of the tooth next the fulcrum."

The fracture may extend to the neighbouring alveoli, and subsequent exfoliation be the consequence.

Thirdly.—The effects of the claw are uncertain. From the irregular form of the *neck*, the claw is exceedingly liable to *slip off the tooth* on either side. This objection will apply more or less to every tooth for the removal of which the instrument is commonly employed; but it will be most readily exemplified in the first and second molares of the upper jaw.

"The tendency to slip is also much increased by the free lateral motion of the claw, a space being left even in the best made instruments—perhaps intentionally—to admit claws of different sizes, which allows it to swerve both right and left. If the use of the key could not be dispensed with, an alteration ought at least to be made in this particular, and instead of allowing space for play, checks or guides should project from the shaft to keep the claw quite steady, and prevent it working out of a true line."

We say nothing of the pain produced by the pressure of the fulcrum—nor of obstruction caused by the irregular form of the roots—suffice it that Mr. Clendon believes that the days of the key instrument are numbered.

The *Forceps*, then, is *the* instrument. Mr. Clendon deprecates their clumsiness and unsuitableness for the purpose they are put to. He observes:—

"In our own day a few practitioners, condemning the application of the key, have extracted *entirely* with forceps, and acquired just reputation and extensive practice by the facility with which they use them. Induced by these considerations, others have made trial and found them fail; they were more unsuccessful in their attempts than they had hitherto been with the key, and consequently returned to the latter instrument with increased partiality. This result might have been foreseen, and is easily accounted for; the forceps *they* used were as unsuitable for the purposes to which they were applied, as common pliars or carpenter's pincers.

"As far as I have had an opportunity of judging, forceps have hitherto been made on most erroneous principles, and, generally speaking, provided they were large or small, straight or curved, was all that seemed requisite;—to adapt them to the various forms and positions of the teeth, no one appeared to consider of any importance; in many instances the edges of the instrument clasped the tooth at right angles, and on bringing together the widely extended handles, one-fourth of the effort necessary to raise the tooth, converted them into a pair of nippers, which excised the crown in the most scientific manner. In some, the edges, although crescent shaped, were only half the breadth of the tooth—the extremities of the edge were therefore the only parts in contact; in others, for the front teeth, the mouth being intersected by a longitudinal groove, only a small portion of the edge, often a mere point, could press on the neck of the tooth; it consequently slipped long before the former showed a disposition to leave the socket. Others again were so unsuitable in form, that the blades actually crushed the body of the tooth before the edges came in contact with the neck; the joints were single, and entirely dependent, like scissors, on an indifferent rivet for support; this, and the great distance from the joint to the mouth of the instrument, rendered them liable to spring from the tooth the moment adequate force was applied."

Mr. Clendon obligingly offers to shew his forceps to any member of the profession who will call upon him. They have been constructed by Mr. Evrard.

We have some capital remarks on the Form and Construction of Forceps. We can only find room for the following:—

"Forceps should be made with the *mouth* adapted, in every instance, to the *neck of the tooth* to which it is intended to be applied: and when fixed, the former to be, as nearly as possible, in a line parallel with the root of the tooth; the edges sharp enough to separate the gum from the neck, yet sufficiently strong and well tempered to prevent their flying when force is used, and so fashioned as to encircle as much of the neck, as the proximity of the adjoining teeth will allow. The blades should be hollowed to suit the form of, and—to obstruct the view as little as possible—but just large enough to admit, the body of the tooth; —the joint double; the blades, to insure their steadiness, working within each other, and the distance between the rivet and the edges not greater than the length from the surface to the neck of the tooth will require; the handles particularly rough, not curved as they generally are, but nearly straight, and so close to each other, that when open and the instrument fixed on a tooth, they may not be wider apart than the hand can conveniently grasp; this is a point to which the greatest importance should be attached, for when widely extended they require a considerable effort to keep them together, which distracts the attention, and from the difficulty of regulating the pressure under such circumstances, the tooth is exceedingly liable to be broken off. The entire length of the instrument ought not to exceed six inches, with the exception of those used for the wisdom teeth, which, from their remote situation, require them a little longer.

"Forceps should in every respect be firmly and substantially made—otherwise the springing of the instrument might be readily mistaken for the yielding of the tooth, and such erroneous conclusion lead to difficulty and disappointment; a certainty on this point gives confidence to the operator, and instead of watching if the instrument maintain the proper position, he is enabled to direct his whole attention to one object, namely—detaching the tooth from the socket.

"The teeth, with reference to their removal, may be divided into eight distinct classes, requiring as many pairs of forceps, differing either in form or size, to correspond with the necks of the respective teeth. They are as follows:—

In the Upper Jaw.

1. The lateral incisors and bicuspides.
2. Central incisors and canines.
3. First and second molares, right side.
4. The same, left side.

In the Lower Jaw.

5. The incisors and canines.
6. The bicuspides.
7. First and second molares, right and left side.
8. Dentes sapientiæ, or wisdom teeth of the upper and lower jaws."

We must refer to the work itself, for ample directions with regard to the application of the forceps to individual teeth. This is indispensably necessary for success. Mr. Clendon recommends that the names of the teeth for which the several pairs of forceps are intended should be engraved on the handles of the instrument, which may be done by a weak mineral acid.

A word or two on the *Extraction of the Temporary Teeth.*

As a general rule, *the temporary teeth ought never to be removed until the roots are entirely absorbed, and their permanent successors sufficiently advanced to occupy the vacant places.* The spontaneous loosening of the tooth affords the evidence of this. Mr. Clendon thinks it of unquestionable importance to keep the temporary teeth in their places as long as possible.

"Many cases of permanent irregularity or crowding of the teeth, I am persuaded, are caused by the injudicious interference of persons, who, if required to examine the mouth of a child—either from ignorance, or a still more culpable motive, always find it necessary to do something—the plea invariably being to *make room* for the new teeth, which, if time were afforded, would not fail, in nineteen cases out of twenty, to provide adequate room for themselves. Thus it frequently happens, from the increased size and early development of the upper and lower permanent incisors, the jaw has not *yet* expanded sufficiently to allow of their advancing in an even direction; the temporary canines are therefore removed without further delay or deliberation. Now, before these teeth are replaced, five or six years will probably elapse, and when at length they make their appearance, their places are already occupied by the bicuspides, which must in turn be sacrificed to make room for them. In this manner, and upon such pretexts, tooth after tooth is removed, and the size of the maxillary arch diminished; and that which was only a passing defect, ultimately becomes a permanent evil. Nor are such persons only to blame: many parents are so extremely anxious for the present appearance of their children's teeth, that they cannot possibly afford nature an opportunity of completing the work already commenced—they wish the impediment to be removed at once; and if the operator suggest delay, to see what improvement time will effect, he will probably be thought indifferent to his duty, and the child transferred to the *care* of those who would indulge no such inconvenient scruples, but comply without a moment's hesitation."

He thinks that "there are only two occasions which will justify the early extraction of these teeth: one is, extensive decay, producing frequent and severe pain, whereby the little sufferer's health or comfort is seriously affected, and which the usual applications fail to relieve;—the other, when the permanent tooth, already through the gum, takes up a position immediately behind the corresponding temporary tooth, the latter still continuing firm, and evincing no signs of a spontaneous removal. It should, however, be recollected, that as the presence of a full complement of teeth is necessary for the perfect expansion of the arch in which they are placed, their early removal is in either case an evil, and ought not to be effected until other means have been unsuccessfully tried, or until a reasonable hope that the defect will remedy itself, no longer remains."

Mr. Clendon sets forth at full length the advantages of the forceps. We need not, however, particularise what most scientific dentists are now pretty well agreed on. But, perhaps, a few of his *Hints to Operators* may not be unacceptable.

"To extract teeth skilfully, in addition to suitable instruments, *confidence* on the part of the operator is an indispensable qualification. On examining the tooth to be removed, he should feel convinced of success, and take every means to ensure it: if he have any doubt of the result, or of his own ability, the chances are the operation will be ill performed. Whatever he considers it expedient to do, should be done effectually:—half measures will never succeed—they only lead to vexation and disappointment. To use extractive force, for instance, when he doubts the position of the instrument, or the security of his hold on the tooth, is worse than useless;—it inflicts additional pain, and perhaps prevents a repetition of the attempt. The object should be, to place the instrument on the part experience points out as the most eligible; and until this is satisfactorily accomplished, no pressure should be applied.

"If the patient prove restless or refractory, it is better to desist at once, and wait until he is reassured; to persevere in a struggle, or to seize a tooth suddenly, with the intention of removing it at all hazards, is very bad practice, and ought not, under any circumstances, to be attempted. Nothing tends so effectually to tranquillize the patient as a firm and quiet demeanour on the part of the operator: it will succeed much better than coaxing or expostulation, or than harsh and abrupt behaviour, which, especially at such a time, is very unjustifiable.

"Every thing in the shape of display, especially of instruments should be

carefully avoided; for, however the effect may impose on many, it only serves to excite the apprehension of the young and timid, and the ridicule, perhaps the disgust, of those who possess stronger nerves and greater discrimination. The place in which the operation is performed should not differ in appearance from other rooms, and the use of the formidable-looking chair dispensed with as much as possible. Under any circumstances, even during difficult and lengthened operations, a chair which will support and steady the patient's head is all that is necessary.*

"The operator should always place himself in front, or at the side, so as to face the tooth about to be removed. To stand on a chair behind the patient, or to seat the latter on the floor, with the head secured between the knees, are positions which should never be permitted, as they admit of undue violence, and have withal a most barbarous appearance.

"Some of these considerations may at first sight appear trivial to those who are accustomed to look upon the operation as an every-day event—in itself of little importance; but it should be recollected that a successful result can only be insured by attention to minute parts; besides, it is the patient—not the operator—who is to judge. However common-place the occurrence may be to the latter, to the former it is an affair of the greatest moment. At such a time nothing escapes attention—every little circumstance is noted, and produces an impression not easily effaced,—an impression that will certainly tell to the advantage or prejudice of the operator;—hence it is we daily find, that no distance, expense, nor even delay, will deter many from availing themselves of the services of those in whose reputed skill they place confidence. That some persons have more dexterity than others, must be admitted; but any one possessed of ordinary strength and an accurate knowledge of the part, by pursuing the methods I have pointed out, may remove a tooth without difficulty, and certainly without danger."

The length of our notice and quotations is a sufficient evidence of our good opinion of this little work. It ought to be in the hands of every medical practitioner, who, with his own, or with those of his assistants, ventures "to draw teeth."

MEDICO-LEGAL REFLECTIONS ON THE TRIAL OF DANIEL M'NAUGHTEN.

By *J. G. Davy*, M.D.

WE all know the violence and ferocity displayed by a part of the public press on the subject of M'Naughten's Trial. If ever a man laboured under monomania, M'Naughten did so, and if he was a responsible agent, nine-tenths of the inmates of lunatic asyla are most unjustly incarcerated.

The ignorance of those who affect to lead public opinion is gross in relation to insanity, and in proportion to their ignorance are their confidence and dogmatism. The clamour which they get up against the medical evidence and medical opinions, though laughable from its impertinence, is injurious in its effects,

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* "It appears almost incredible, yet I have been assured of the fact by those on whose testimony I can rely—and who mentioned it in terms of severe reprehension—that there are 'operating chairs' in use, with such a variety of movements and complication of machinery, as to resemble an improved portable crane, or some ingenious device for torture, rather than a chair for a person to sit on. It may possibly be suggested that they are intended to frighten away pain and supersede the necessity for extraction."

prejudicing, as it does, the community, and recoiling on the heads of the unhappy victims of law, legislation, and bigotry.

It is of paramount importance at the present moment to disseminate correct notions on the nature of insanity. The Judges are deliberating at the summons of the Chancellor, who, backed by an ex-Chancellor, himself a representative of panto-mania, seems far from disinclined to render the law of insanity stringent, and to hold all cheap but the judicial ipse dixit. That a set of men, whether clothed in red or black, who practically know nothing of the malady they pronounce upon, should settle ex cathedra what are its symptoms and its nature, is certainly absurd enough. That these same men should affect to look down on the opinions of those who make its investigation their business, and who, in all that relates to an acquaintance with the bodily and mental constitution, must be immeasurably their superiors, goes even beyond absurdity. But when the sum of their ignorance is to constitute the law, and become the Procrustian bed into which the wretched madman is in future to be forced, it is the duty of the humane and the enlightened, to oppose to the brutality of political rancour, and the assumptions of incompetent authority, the mild and steady dictates of science and of truth. Our course is clear. It is for us to state the facts as they are—to shew when and where and in what degree the mental powers are impaired—to disabuse the world of its vague notions of the *mind*—to point out the connection between mental and corporeal ailments—to explain the dependence of the former on the latter—and to establish the axiom that, as the brain is the instrument of the intellectual acts, it is to its alterations that we must look for the causes and the explanation of their aberrations. To whatever result the pursuit of truth may lead, it is immaterial to inquire. Fiat justitia, ruat cælum. That pursuit is the noblest accorded by Heaven to man, and it is a sort of blasphemy on Providence to pretend that the discovery of truth can be baneful. Society must be rotten when its parts are cemented by falsehood, and upheld by error.

We trust that our brethren will not be intimidated, by the blustering of any party, nor shrink from the fearless expression of what they think and know, in the Courts of Justice. A bold front and a calm disregard of bigoted or of interested clamour befits those upon whose evidence the life of the unfortunate maniac hangs. And whatever opposition may be made to the reception of truth, we may rest in the perfect confidence of its final triumph.

In the Work before us the insanity of M'Naughten is satisfactorily demonstrated. The various forms assumed by the disease, and particularly the several phases of monomaniacal delusion, are displayed by a reference to cases in the wards of the Hanwell Asylum, and the prevalent ignorance on the whole subject is conclusively exhibited and freely commented on. The author refers to the denunciations of the Press, of the *Times* especially, and takes that tone of humane indignation which might be expected from a man of science and candour.

Spirit of the Foreign Periodicals.

HYDROPATHIC TOUR FROM STRASBOURG TO GRAEFENBERG.

WE have been not a little amused with a report—it is not distinctly stated whether it be *official* or not—sent by Dr. *Scoutetten*, professor of military surgery at Strasbourg, to the Minister of War, of his tour through the German States to the head quarters of Hydropathy, or Hydrotherapeia (as he calls it,) with the view of ascertaining its merits and determining the propriety of introducing it into France. The letter is dated the 20th of November, and addressed to "Monsieur le Marechal;" he having graciously favoured the traveller with introductions to the diplomatic agents of the government in the different countries through which he passed. The present remarks, we are more than once somewhat ostentatiously told, are only introductory to a larger and more scientific (!) work on the subject, which will be published forthwith.

Leaving Strasbourg on the 20th of September, I travelled, says M. *Scoutetten*, through the Grand Duchy of Baden, which has only one, and that very small, hydropathic establishment to boast of: it is situated at the foot of the mountains in the Black Forest. The kingdom of Wurtemburg, however, has three; by far the best one is near the small village of Eslingen, in a charming and most healthful district.

The speculators (actionnaires) seem to be vastly well satisfied with the result of their undertaking, as I was told that they are ready to lay out a hundred thousand francs, and more, in the erection of new buildings. The physicians of Stuttgard (the capital) have not taken any interest in the matter, and the system does not seem as yet to have had any influence on the social habits of the community. Not so with Bavaria, which, for the last six or eight years, has been "seriously occupied" with hydrotherapeia.

In 1837, the king sent two of his physicians to Graefenberg, to ascertain the merits of the system; and, since that time, numerous establishments have been set a going in different parts of his kingdom. The most complete one is at Alexandersbad.

Many of the most distinguished physicians of Munich frankly acknowledge that the hydriatic plan, "convenablement appliqué," is a resource of potent efficacy in various diseases which have resisted the ordinary methods of treatment. However this may be, there has, unquestionably, been a marked change in the habits of many persons in the higher ranks of society, since the hydropathic regime has come into fashion. The members of the court have already renounced the use of wine and other exciting beverages; and every one uses the cold bath in the morning. Even the queen and her children "ne se reculent pas" from these refrigerant ablutions. (How interesting!)

What deserves especial notice is that, in the Military Hospital a few miles from Munich, Dr. *Gleich* has become so smitten with admiration of the new system, that he treats every case, whether of internal or of external disease, by it; (we wonder if this be with the sanction of the medical board at head-quarters;) and his success has been, he says—as a matter of course—truly surprising. But then M. *Scoutetten* found, by comparing the mortality in this hospital with that in others where the hydropathic treatment was unknown, that in truth there was very little difference to be discovered between them. He continues: "Having traversed Bavaria, I then entered the Austrian dominions, of which Silesia—where the pretty village or hamlet of Graefenberg is situated—forms a part.

"The enthusiasm in favour of the new system throughout Austria is so great with multitudes, that I was credibly informed by the leading banker in Vienna, that many of the *restaurateurs* there, finding that there was no longer any sale for wine and liqueurs, bethought themselves of retailing water at so much a glass. The water in Vienna itself being rather indifferent, they brought a better kind from Schonbrun.* The use of cold ablutions is now so very general among all classes, that quite a new trade has sprung up in the place, viz. the manufactory and sale of baths of all sorts.

"With the exception, however, of the old Baron *Turckheim* (who, we suppose, is in his dotage,) none of the medical men in Vienna have embraced the hydropathic system. Dr. *Guntner*, the physician in ordinary to the Emperor, told me that, while he has witnessed useful results from it in certain instances, he has known others in which most injurious consequences were produced.

"*Priessnitz*, however, has had the good luck of having the royal permission to treat all sorts of diseases on his own plan, and to act in every respect as a licensed physician, although he has never studied in any way the principles of medicine. There are not fewer than six establishments in the neighbourhood of the Austrian capital; but only two of these enjoy much repute. In one of the military hospitals, that at Muhlau, near Inspruck, in the Tyrol, the system has been introduced for the treatment of those diseases which may be considered by the medical officer as suitable for its employment."†

M. *Scoutetten* now proceeded to Graefenberg, which is situated about a hundred leagues to the north of Vienna. It is a mere hamlet, consisting of thirty houses or so on the east slope of the mountain, which rises above the little village of Freywaldau. The air of the place is pure and bracing, and the water is excellent. Here it was that Hydropathy took its rise; and certainly the change that has been wrought in the district within the space of a very few years, is truly marvellous. The peasants of this part of the country had long been in the habit of using water freely in the treatment of most of their diseases. *Priessnitz*, however, was the first to follow out a regular system. Being more intelligent and inquiring than his fellows, he observed that the benefit obtained was almost always proportionate to the amount of perspiration induced; and having had the misfortune (or we may rather say, the good fortune) to break a couple of his ribs, he undertook to cure himself on the cold water system, and, as a matter of course, succeeded most admirably.

This cure made a great stir in the place, and brought many of the people in the neighbourhood to consult him about their maladies. His fame soon began to spread, and was not long of passing the snowy mountains of Silesia to different parts of Germany.

In 1829, forty-five patients came from remote districts to consult the Graefen-

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* In *Dresden*, and several other continental towns there have been established regular associations of *hydrophilists*, who regularly correspond and encourage each other in promoting the use of the water regime. These societies, says our author, have a good deal of analogy with the temperance clubs of England and America. If this be the only end and aim of hydropathy, we wish it all possible success.

† "There are now hydropathic establishments, not only in all the leading towns of Germany, but also in Petersburg, in Riga, and in different parts of Belgium and England—one, near London, has been organised on a very large scale by wealthy 'actionnaires.'" What is brother Jonathan about, that he has allowed all other nations to go so much *ahead* of him in this affair? Is it that he still prefers his mint-julep, sangaree, brandy-flip, &c., to the pure element?

berg doctor; in 1832, not fewer than 118; and in 1836, 469; and, in 1840, upwards of 1,500.

"In the present day," says our author, "Graefenberg has become the hospital of the incurables of all Europe. I there saw patients from Petersburg, from Moscow and Paris, from London and Philadelphia, from Astracan and Constantinople, and, as a matter of course, from Vienna, Berlin, and several cities of Italy.

"During the present year, the Prince of Nassau, Prince Lichtenstein, the sister of the King of Prussia, the Princess Sapieha, Princess Gortshakoff, the son of the Duke of Sussex, from England, many of the magnates of Hungary, besides a host of countesses and baronesses 'de tout age et de tout pays' have been there.

"What makes all this the more wonderful is, that there is surely nothing in the mode of treatment pursued there that is at all likely to attract the fashionable idler, as is the case at most of the German watering-places. Every thing is conducted in a serious, nay ascetic, manner; the life led is most simple; and the amusements are very few indeed. It was certainly an amusing sight to see so many distinguished personages, accustomed themselves to command, obey with the most religious scrupulousness the prescriptions of a peasant, who can scarcely write his own name. But, although illiterate, *Priessnitz* has received from heaven (!) a rare sagacity, united with great firmness of purpose, and no common strength of judgment. Had he not been so indued, he never could have acquired so widespread a celebrity, or been able to carry through his projects with such astonishing success, as he has done. He says little, and never gives any reason for his prescriptions. He takes no note of his cases; but his memory must be excellent, as we have been told that, if five hundred patients are assembled together, he quite recollects everything he has ordered to each individual. He has already amassed a large fortune, and has purchased a beautiful estate in the neighbourhood of the scene of his exploits."

It has been unjustly said that *Priessnitz* applies the same method of treatment to all his patients alike. This is a mistake. The use indeed of water, in some form or another, is the basis of his treatment on all occasions; but the mode of using the remedy, and the extent to which it is carried, are varied according to the circumstances of each case. The object seems to be to wash away every impurity from the great surfaces of the body, the skin and alimentary passage, and to cause these parts, so to speak, to wash themselves by copious transpiration.

All sorts of baths are used, from the simple foot to the general douche or plunge bath; the temperature of the water varying from 40° to 70° or even 80°, in some cases, when the constitution of the patient is weak and easily affected. Then the fair element is not only drunk profusely, but is also administered more or less frequently in the form of *lavements*. By-the-bye, this French word very happily expresses the meaning of the system. We should not be surprised if, after this, our neighbours claim the discovery of Hydropathy.

It is not necessary to describe particulars:—swathing the body in two or three blankets; the drinking several tumblerfuls of cold water when the skin begins to perspire; the plunging into the cold bath when every pore is sweating profusely; the subsequent drying, rubbing, and dressing; the walk for an hour, during which six or eight tumblerfuls more of water are drunk; the simple breakfast, at eight o'clock, of milk and plain bread; the second walk for another hour; the undressing and the investiture with the wet sheet at eleven, and the subsequent currying both before and behind; the dressing again and the third walk; the dinner at one o'clock; the fourth walk; the douche bath between three and four o'clock; the fifth walk, &c. &c.

M. *Scoutetten* seems to have been quite pleased with the animating sight of the dinner table, at which not fewer than five hundred persons can be accom-

modated. There is no dainty put down; nothing but plain joints of meat, vegetables, fruit, and water in abundance: 'viola tout le diner.' And yet it would astonish the pampered inhabitants of most towns to see with what vigorous appetites the *invalids* set to their repast, and what quantities of vivers most of them consume.

By-the-bye, *Priessnitz* seems to treat his patients better than mine host in this country usually does mail-coach travellers; they are not obliged to bolt their food and be off; plenty of time is granted; the dinner being served up 'avec une lenteur Germanique desesperante,' and occupying usually a full hour and a half.

At seven o'clock—the patients having previously had their post-prandial douche-bath, their rubbing down, and their walk 'a grands pas'—the supper evening repast of cold milk and plain household bread is served up.

Each day the patient goes through the same routine of wrapping, sweating, bathing, rubbing, walking, eating, and sleeping.

> "On *cold-served* repetitions he subsists,
> No maiden relishes, no unbroached delights!"

The circle of continually-returning occupations however, Dr. S. says, so completely fills up every hour of the day, that the patients rarely experience any *ennui*. Really if the "whole duty of man" consisted in purging away the impurities of his sinful body by ablutions, no system could be altogether more admirable than that of hydropathy; and *Priessnitz* should be forthwith canonized. At all events, we must all surely admit that his plan is a thousand times better than that of the saints of old, who used to wear their sackcloth shirts unchanged for six months, until they were actually quick with vermin.

No medical man will be likely to dispute the advantages of such a regime as that described above in a variety of chronic ailments, provided there be no co-existent internal diseases of consequence. But what will our readers say when we tell them that Dr. *Scoutetten*, first professor at the military hospital in Strasbourg, actually tells us that the hydropathic mode of treatment is very successful even in the most grave acute diseases, especially in typhus fever and in obstinate dysenteries. *Priessnitz* himself and his German disciples are much more prudent; for they receive none but chronic cases—crafty rogues!

Some reader may here very naturally ask, how long is the washing and scrubbing system to be continued in the average number of cases? Dr. S. replies, from one, to six, twelve, or twenty months. He saw, indeed, some patients at Graefenberg who had been there for two and three years: the Prince Lichtenstein has not left it for four years. (Query. Has this worthy potentate anything to do? or is it that his purse is not very heavily laden?) The following bit of information as to what classes of diseases are most benefited by the water-cure, we must give in the doctor's own words:—

"I should say that success is almost certain in gout, rheumatism, all abdominal affections, (!) scrofula, and inveterate syphilis; that it is less uniform in cutaneous diseases, in recent syphilis, in paralysis, and other affections of the nervous system; and lastly, that the treatment generally fails in chronic affections of the chest!!"

After this scientific general announcement, the Doctor gives reports of several cases of wonderful cures which he saw at Graefenberg; they all occurred, it would seem, among the big folks of the earth.

An old French General, 70 years of age—who had a liver that extended over half his belly, and who, after consulting all the doctors of any repute in Paris, Vienna, and Italy, had actually, on one occasion, gone off to the Caucasus to drink hot water there—was, at length, induced to put himself under *Priessnitz's* regime, when every other means had failed. His liver, we are told, is now

reduced to a 'juste-milieu' dimensions, and he has quite recovered his health and strength!

The case of Dr *Bulard* is still more extraordinary. His liver had actually become so enormously large, as to make his abdomen as big as that of a woman nine months gone with child. He had been four months at Graefenberg, when seen by Dr. *Scoutetten*, who "feels confident, that by persevering in the treatment, he will be perfectly cured!"*

The son of Prince S———, 12 years of age, had for several years been subject to frequent returns of unappeasable vomiting, which usually lasted for one or two weeks at a time, and which had resisted every remedy that had been tried. He was speedily cured!

The Countess P——, 65 years old, had for many years suffered (poor soul,) with excessive great pain and stiffness in her hands and feet. When she came to Graefenberg, the joints seemed to be almost anchylosed. Under the hydriatic regime she has again become plump and active, can walk famously, eats like a trooper, and writes with ease; nay, she even "touchait le piano devant moi," says the doctor!!

Priessnitz is a lucky fellow; he not only gets lots of cash from his patients, but has monuments raised by them in his honour. A full-sized metal statue of a lion—by-the-bye, our own Hygeist, *Morrison*, used to sport one on the top of his house in the New Road here—faces the village of Freywaldau, with commemorative inscriptions on its pedestal; and on the road to Graefenberg, stands a monumental fountain, surmounted with the figure of a star, emblematic of the 'avenir' of hydrotherapeia.

Dr. *Scoutetten*, after lauding in the highest terms the success of *Priessnitz's* practice, acknowledges that he (the latter) commits some egregious mistakes in diagnosis; he cannot distinguish between nervous and aneurismatic affections of the heart, or between simple gonorrhœa and the urethral discharges connected with the presence of stricture. But we much doubt whether the peasant of Silesia has ever been guilty of such disgraceful malpraxis as the professor of Strasbourg.

What are we to think of a regularly-educated medical man trying his experiments of hydropathic treatment on a man in the last stage of typhus fever, "dont l'existence ne se revelait que par un bruissement à la region du cœur?" Had he told us nothing else of his practice but this, we should have had quite enough to know what amount of faith we should give to his opinion on any medical subject.

We cannot dismiss the account of this professor's hydropathic trip without expressing our astonishment at the many proofs which it exhibits of his ignorant credulity. Is it that he has fallen into his dotage, and cannot distinguish between the random successes of a clever empiricism and the well-calculated results of legitimate practice? or is he influenced by some mercenary motives, and supposes that he may 'make a good thing,' like several of our own countrymen, of the new system?

To do M. *Scoutetten*, however, no injustice, we may here mention that the water-cure has recently been tried in one of the hospitals of Paris, and that a full report of the practice has been duly sent to the Council of Health. M. *Devergier*, one of the physicians of the Hôpital St. Louis, entrusted several cases of cutaneous disease—psoriasis and lepra—and two of chronic rheumatism, to the care of M. *Wertheim*, to be treated on hydropathic principles. The results on the whole were any thing but very satisfactory; three only of the first set being cured: both rheumatic patients were much benefited.

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* Most unfortunately for the Doctor's skill in prognosis, his poor *confrere* has recently died at Dresden.

This, however, is certainly not giving a fair trial to the system; for one part only of the *regime* required can be duly carried out in a metropolitan hospital; the bracing air, the mountain walk, &c. &c. are awanting. That not a few cases of chronic disease, if unattended with internal mischief, must be benefited by the hydropathic treatment pursued as *Priessnitz* does it, among the mountains of Silesia, no reasonable medical man will doubt: for, after all, what does this treatment come to?—to very nearly what jockeys and pugilists in this country would call capital *training*. Instead of putting on half-a dozen of great-coats, and walking briskly for an hour or two, until the skin is streaming with perspiration, the Hydropathist is wrapped up in blankets like a mummy and left to stew for some time in his own liquor, to be then sluiced with cold water and well curried down. The professors of both arts follow nearly the same regulations about diet and exercise.

As to the application of the hydropathic treatment to the treatment of inveterate skin diseases, we can see no advantage likely to accrue from it, that might not be much more easily and quite as effectually obtained by a regular system of vapour-baths, in conjunction with the use of such means as must improve the general health, such as wholesome diet, exercise in the open air, &c.

M. CHOMEL ON CLINICAL OBSERVATION.

In his opening lecture at the Faculty of Medicine, this distinguished teacher made some excellent remarks on what he called 'therapeutic experimentation,' and pointed out the rules which must be observed by medical observers, if they hope to arrive at any thing like certainty in their conclusions. After declaring his opinion very decidedly against most of the recent attempts at innovation, of which therapeutics are incessantly the object, he very ably showed that the primary and essential foundation of all good experimentation is the knowledge of three things—the remedy itself, the patient, and the existing disease.

With respect to the *remedy* to be employed, the medical man should be thoroughly acquainted with its nature and composition, the pharmaceutic preparations of it that are in use, and the adulterations to which these are liable. Without such a knowledge, he will be apt to attribute to one substance the properties that belong to another, and to a compound medicine those of a simple one, &c. For example, it is now well known that the virtues of the syrup of asparagus—so long in favour as a diuretic—are entirely owing to the extract of digitalis introduced into its composition.

It is equally necessary to attend to the age, the temperament, the occupation, &c. of the *patient*, when any therapeutic experiment is made; and with respect to the *disease* itself, the physician must consider its nature, duration, its usual course and natural termination. As a general remark, it may be asserted that a series of experiments will be the more valuable and instructive, in proportion as the existing disease is the more fixed in its seat, and the less complex in its character.

Supposing now that the conditions, of which we have been speaking, are all well determined, the question comes to be, how should we proceed to make trial of any therapeutic means? First of all, it should be tried alone, and not combined with other remedies; else how can we determine what results belong to the operation of the one, and what to that of the other? Secondly, we must be sure that it has been properly administered or used: hence the importance of medical men often administering certain medicines themselves, or, at all events, leaving the most exact directions to the attendants. If we have to do with any very energetic medicine, we should try its effects repeatedly on the lower animals, before resorting to its use with our fellow-creatures. And lastly, we should remember that mere change of place, the vicissitudes of the weather, the in-

fluence of mental emotion, the intervention of other diseases or of some other accidental circumstances, may all exercise on the progress of any disease such important modifications as will materially alter the results of any therapeutic experiment.

M. *Chomel* illustrated the truth of these precautions very happily by alluding to what occurred in his own practice very lately. He wished to try the effects of the Humulus lupulus as a remedy in intermittent fevers, and he accordingly determined to give the remedy a fair trial in 22 cases, which were under his care. But it so happened that the trial could not be made for a few days: and, by that time, the fever had spontaneously ceased in no fewer than 19 of the cases: in the remaining three, the powdered hop was given in very large doses, but with no obvious benefit. How erroneous would the conclusion here have been, had the medicine been administered to all the patients as early as it was first intended!—*L'Examinateur Medical.*

Remarks.—The observations of a calm observing physician like M. *Chomel* are always valuable, especially when, as in his case, he does not belong to any particular sect or school of medicine. What a contrast between the reflections of the physician of the Hôtel Dieu on any practical subject, and those of the ardent professor of La Charité hospital, M. *Bouillaud!* The one, like a cautious but bold general, makes himself throughly acquainted with every thing appertaining to his own army and that of the enemy, the nature of the ground, the character of the troops, the spirit of the officers and so forth, before he comes to blows; the other reminds you of a fiery captain of hussars, that plunges into the midst of the fight, without a moment's consideration whether an equal advantage might not be obtained without the sacrifice of a single life. Be assured there is no little analogy between the duties of the military, and those of the medical, profession. The physician is the general; the pharmacopœia—using this term in a very wide acceptation—is his army; the disease is the enemy opposed to him. He has his skirmishes, as well as his pitched battles, to fight. He has his long campaigns, as well as his sudden encounters, to be prepared for. He has his out-posts to look after, his guards to set, his entrenchments to fortify, his garrisons to subsist. His commissariat, as well as his gunnery and ammunition stores, must be attended to. When apparently most secure, he is liable to sudden surprises and inroads; the work of one hour may upset the exertions of a whole month; the events of one day may ruin the labour of years. And last of all, he must be prepared for many emergencies which no human vigilance can foresee, and no human prudence can prevent. A passing storm may lay prostrate in a moment his wisest preparations; or the undermining influence of fear and despondency may render them all of no avail No set of men surely ought to know better, or feel more deeply, than the soldier and the physician, the full force of the saying that "the race is not always to the swift, nor the battle to the strong."—*Rev.*

M. Chomel on the Diagnosis of Pneumonia.

In one of his recent clinical lectures at the Hôtel Dieu, M. *Chomel* made the following remarks on the importance of shivering as a diagnostic sign of thoracic inflammation, in commenting upon a case of pneumonia that was in the wards at the time.

"I took much pains in questioning this patient, to ascertain whether she had experienced any chill, before the commencement of the attack; and her reply was always in the negative. This circumstance appears to me of importance;

and it is therefore designedly that I now call your attention to the subject, seeing that it is the professed opinion of many physicians that pneumonia, like articular rheumatism, may generally be traced to the influence of damp and cold. The results however of my own experience, as well as of that of many others whom I know, are quite opposed to this opinion. No doubt it often happens that pneumonic patients will be found to have been chilled some time before the attack came on; but assuredly the chill is not the only, nor even the principal, cause of the disease. If we inquire into the particulars of a case, we shall generally find that there was a predisposition to the malady present in the system at the time, and that the chill only accelerated the development of the mischief. It was merely the occasion, so to speak, of the explosion of a pre-existing morbid state; just in the same manner as a simple indigestion may be the exciting cause of a gastric inflammation in a person, in whom there is a strong disposition to this disease.

"But the same remark does not hold true of shivering when this occurs at the commencement of a disease. In my opinion it is an almost invariable sign of pulmonary inflammation. Whenever, therefore, this symptom is or has been present, the physician will do wisely to direct his attention to the chest; and very generally, at least according to my experience, he will find that an inflammatory process has been set up in the lungs—unless indeed some well-marked symptoms clearly point to another organ as the seat of suffering. I do not deny, as a matter of course, that an attack of peritonitis, enteritis, &c., is sometimes ushered in with shivering; all that I mean to assert is, that this symptom is infinitely more common as a precursor of pneumonia than of any other inflammation. Hence in practise, whenever any of my patients has a well-marked shivering fit, even although other symptoms indicative of disease elsewhere be strongly marked, I at once suspect that the lungs are more or less seriously affected. On very many occasions indeed, this symptom alone has sufficed to suggest to me the right diagnosis, while other medical men, who have seen the case at the same time, have formed a very different opinion.

"There is another character which equally deserves the attentive consideration of the physician—and that is the pain in the side. In pleuro-pneumonia the pain is generally seated in the region of the mamma, although the affected part of the lung does not correspond to this point, or perhaps extends much beyond it. It has been suggested, in the way of explanation, that there is a greater degree of friction between the pulmonic and the costal pleuræ at this point than at any other, and that this may be the cause of the phenomenon in question. But if such were the case, the pain should surely not be limited to so circumscribed a spot, but should extend over all the surface where this greater friction is experienced; and we might expect, moreover, that it should change its locality—which certainly does not hold true. No satisfactory explanation has hitherto been offered of this symptom, and we must therefore confess our ignorance upon the point."—*Gazette des Hôpitaux.*

Remarks.—M. *Chomel* surely attaches an undue importance to the occurrence of shivering as a distinctive sign of pneumonia: he represents it as almost pathognomonic of the disease. But are not all the Pyrexiæ usually ushered in with this symptom? and however frequent bronchitic and pulmonic inflammation unquestionably is, as a complication of febrile disorders, it cannot be regarded as of almost constant occurrence. No one symptom, however valuable, should ever be be trusted to inordinately.

MM. ANDRAL AND GAVARRET ON THE DEVELOPMENT OF VEGETABLE PRODUCTIONS IN ALBUMINOUS FLUIDS.

In prosecuting their inquiries respecting the changes which the blood undergoes in the course of various diseases, the attention of these gentlemen was drawn to a communication which M. *Liebig* recently addressed to the Academy of Sciences, and in which—after stating that in his opinion fibrine and albumen were substances perfectly indentical in their nature, and that he had obtained globules of blood from the former—he said, "I have succeeded in precipitating albumen in the form of globules, by adding a sufficient quantity of water to serum which has been rendered neutral by an acid."

Here was a most important announcement; and the question that immediately suggested itself for the consideration of the physiologist, was whether albumen could, by simply undergoing a change in form, constitute the nuclei of the red globules of the blood.

MM. *Andral* and *Gavarret* set about repeating the experiments of the distinguished German chemist, and they found to their astonishment that the corpuscles—more or less exactly rounded in shape—which were thus developed in serum treated in the manner mentioned above, were in truth the rudimentary forms of a vegetable substance, in many respects very similar to that found in certain fluids after the act of fermentation. Having ascertained the existence of this vegetable in the serum of the blood, they extended their examination to other albuminous fluids, as the white of the *egg*, various morbid effusions, the serous part of purulent matter, &c.; and in all these—their alkalinity being first neutralised by the addition of an acid—the microscopic vegetable was discovered. The description which they give of their experiments is as follows:

"Fresh and pure serum of blood, after being rendered slightly acid by very diluted sulphuric acid, was mixed with about twice its quantity of distilled water. The liquid, at first quite transparent, becomes almost immediately cloudy in consequence of albumineus-looking matter becoming suspended in it. This amorphous matter gradually falls down to the bottom of the vessel, and collects there as a grayish-coloured sediment, while the supernatant liquor recovers its transparency, which it continues to retain, although very curious phenomena are soon developed within it. If, at the end of about twelve hours or so, a drop of this fluid be placed on the object-glass of a microscope, we observe diffused through it a number of vesicles, of a spherical or oval shape, quite independent one of another, and all perfectly diaphanous. Some of them appear to be empty; others seem to contain a short of amorphous 'semis;' while a third set are observed to enclose a few distinct globules irregularly dispersed within their transparent cavities. It is always at the surface of the fluid, where this is exposed to the action of the air, that these vesicles are found to be first developed. Other changes are not long of making their appearance. The surface of these bodies soon begins to push out buds, which are similar in appearance and contents to the parent vesicles themselves, and which gradually lengthen into stems—these again giving out branches, and the branches giving out smaller ones, to an almost indefinite increase. All these divisions and subdivisions terminate in culs-de-sac or blind ends, so that the entire individual forms but one cavity closed at every point.

"Hitherto we have described the vegetable as formed, at its point of development, of a single vesicle, from which are given out buds, stems, and so forth; but there is another mode of formation which we shall now endeavour to explain.

"Instead of remaining solitary, the vesicles may be agglomerated in groups of twos or threes together, so as to constitute a complete system. From the simultaneous development of all these vesicles are produced hollow stems; some of

which, as they increase, assume a moniliform appearance; while others retain a cylindrical shape, the hollow of the cylinders being divided into compartments by transverse septa. These new individuals, generated by the fusion of several vesicles into one, always terminate, as in the former instance, in blind culs-de-sac, and are observed to be either empty or partially filled with globules or with amorphous 'semis.'"

The phenomena now described are observable in the serum for four days or so, after it has been treated with the sulphuric acid. During this time, the fluid has become more or less completely turbid from flocculi of mucilaginous matter becoming suspended through it. These flocculi, if examined with the microscope, exhibit an inextricable meshwork, formed by the crossing and recrossing in all directions of the stems and branches of the vesicles, in the midst of which (meshwork) are observed numerous vesicles in different stages of development. At about the end of the fourth day, a new series of phenomena is observable; and what our authors have called the second period of development may then be said to commence.

"The surface of the fluid becomes covered with irregular patches, like floating islands, which the naked eye might take for accidental impurities deposited by the atmosphere. By the microscope, however, we find that they are composed of innumerable vesicles of various sizes, and very variously arranged—in some places, irregularly and at random; in others, with greater or less symmetry in straight or curved lines, or in the manner of arborisations.

"Amid this serum, which is found to be composed of an accumulation of genuine germs, and in the most superficial layers of the fluid, we are not long of detecting all those vegetable forms which were observed during the first four days, but which are now less simple in appearance and more varied in character. About the twelfth day, the entire surface of the fluid is covered with a thick membranous crust, which adheres to the sides of the vessel, and is formed by the interlacement of the numerous vegetable productions that have become developed.

"Beneath this serum, the fluid contains a multitude of vesicles and vegetable forms in different stages of evolution. If the serum be removed, another layer is speedily formed; and this phenomenon is repeated several times, until the whole fluid becomes putrid. We have seen this process of production continued for at least a month; at a certain period, spots of mouldiness appear on the surface of the membrane."

MM. *Andral* and *Gavarret* proceed to shew that the same phenomena are observable in other albuminous fluids, and conclude their observations by stating: "that, whatever be the origin of the albuminous fluid, and whether it be the product of healthy or of diseased action, if we only render it slightly acid and then dilute it with distilled water, we shall find, with the aid of a microscope, that an infusory vegetable becomes developed in it, under the influence of the oxygen of the atmosphere."—*Gazette Medicale.*

MEMORANDA ON PHLEGMASIA DOLENS.

Although there is nothing novel or very striking in the following observations of M. *Tessier*, one of the physicians of the Hôtel Dieu in Paris, there is a practical tone about them which renders them acceptable. The author, like most of his countrymen, is apt to adopt exclusive opinions upon any subject to which he directs his especial attention—the favourite one of M. *Tessier*, being the disease known by the names of purulent cachexy, purulent infection, purulent resorption, &c., and which, after all, seems to be close akin to, if not identical with, hectic fever.

Case 1.—A woman, who left the Maternité Hospital on the ninth day after her confinement, caught cold, and was seized with a sharp pain in the left side, which induced her to enter the Hôtel Dieu. By the use of cupping, &c., the symptoms were soon relieved; but then a painful swelling of the upper part of the right thigh supervened: the tumefaction gradually extended over the entire limb, from the hip down to the very foot. There was considerable pyrexia present, but no symptoms of any gravity. Under the use of very simple means, the swelling and pain left the right thigh, and settled in the left one, following exactly the same course as it had done before. At first there was great tenderness in the groin, extending along the inner side of the thigh, in which part a hard somewhat knotty cord could be distinctly felt; this was unquestionably the saphæna vein. The woman ultimately recovered perfectly. Subsequently the crural nerve became the seat of neuralgic suffering, and occasionally there was a tendency in the pain to settle in the abdominal parietes. Repeated purgatives were given with the view of preventing a localisation of the disease. (We should have preferred the use of warm baths, perhaps sarsaparilla, quinine, &c.—*Rev.*)

Remarks.—This was a mild case of the disease; as indeed most of those are which come on two or three weeks after delivery. The most dangerous cases usually supervene at a much earlier period, and are generally ushered in with shivering and other unpleasant symptoms. The puffy swelling of the limb too is almost always much greater; it is usually accompanied with more or less erythematous redness of the parts, and has a strong tendency to terminate in suppuration. The two sets of cases therefore are very different, and require very different modes, or perhaps we should rather say degrees, of treatment. In the one, simple emollients and febrifuges will usually suffice; but in the other, much more vigorous and energetic means must be used.

Of late years it has been the fashion with many writers to substitute the term *phlebitis* for the old one of *phlegmasia dolens*. This is certainly not right; as it is not invariably or necessarily the vein or veins that are chiefly affected. The disease in some cases is seated in the lymphatic vessels; while, in others, it seems to be confined in a great measure to the cellular tissue. When the case is really one of phlebitis, we can generally feel a hardened cord or cords along the inner side of the limb, and the disease is observed usually to commence with an œdematous swelling of its upper extremity, just below the point where the vein has become obstructed or obliterated. This arises from the circumstance that the blood, in the veins lower down in the limb, finds a way through anastomosing branches, whereas at this point it meets with an impediment.

In phlebitis, as in arteritis, the first phenomenon of the inflammatory process—of whatever character this process may be, suppurative or resolutive—is always the formation of a coagulum within the vessel. If suppuration occurs, the question at once arises, where is the pus formed, on the surface or in the substance of the clot? In ordinary phlegmon we know that this formation always goes on from the centre towards the circumference; and we may therefore presume that, in cases of suppurative phlebitis, the matter will be formed in that part of the vein corresponding to the middle of the coagulum. Authors have differed not a little among themselves on the point under consideration. Some have contended that the pus is secreted by the inner surface of the vein, and becomes effused within its tube; but then the difficulty arises, how can any effusion take place, seeing that the tube is completely obstructed by a coagulum? Others have said that it is secreted by the membranous envelope of the coagulum; but then we ask where is this envelope? We cannot see it. If we examine carefully for ourselves the phenomena in question, we find that the pus is situated in the centre and on the periphery of the coagulum; sometimes, but not commonly, between the two. We cannot suppose that imbibition has any thing to do with this, as there is no matter to be found in the intermediate points. The

pus is therefore contained in the cyst, so to speak, of the coagulum, and is thus prevented from commingling with the current of the adjoining circulation. There is always, in this case, an adhesive phlebitis, which precedes and sets limits to the inflammatory process. When pus is found on dissection blended with the mass of the blood, as for example in cases of glanders, &c., it does not proceed from any one vein that has become inflamed, but is 'formé de tout pieces dans la circulation'—*i. e.* is a spontaneous and intrinsic product of the circulating fluid.

Case 2.—A woman was twice bled during an attack of acute rheumatism. After the second operation, the arm became swollen and painful. In the course of a few days, a small quantity of pus could be made to ooze out from the wound, by pressure along the course of the cephalic vein. The swelling extended upwards to the axilla; and alarming constitutional symptoms—repeated shiverings, yellowness of the surface, thirst and dryness of the tongue, delirium, diarrhœa, &c.—supervened. The diagnosis was obvious; we had to deal with a case of traumatic phlebitis occurring during the course of a rheumatic attack. A number of leeches were applied on the arm night and morning, and it was kept continually in a bath; at the same time, quinine was administered in frequently repeated doses. Under this treatment the constitutional disease subsided in the course of a few days, and the local symptoms, with the exception of the swelling, were much abated—in short, a simple œdema was now substituted for a diffused phlegmon. After the lapse of ten days, all the symptoms had entirely ceased; but then a painful swelling of the mamma of the same side came on; fluctuation became perceptible in it, and the abscess, although rather deep-seated, was accordingly opened. Eventually the patient left the hospital quite well.

M. *Tessier*, in commenting upon this case, considered it "an example of phlebitis, symptomatic of a purulent condition of the system," and contended that it is impossible to give any satisfactory explanation of the phenomena in such like cases upon any mechanical theory of a mere admixture of pus, secreted from an inflamed vein, with the current of the circulation. How, for example, can we thus account for the sudden appearances of those phlegmons and abscesses which are often so rapidly developed, and go on either to suppuration or to resolution in the space of 24 hours or even less, and all too without any previous inflammatory process?

In a practical point of view, the consideration of these phenomena is not less important. If, under such circumstances, we attempt to arrest the progress of suppuration by making compression along the *trajet* of the inflamed vein, the chances are that an extensive diffused suppuration—similar to what we so frequently observe in the surgical wards—will be the result. It is often quite impossible to give a satisfactory explanation of the manner in which the particular symptoms are engendered; and therefore the only rational mode of treatment consists in accommodating our remedies to the indications presented by each case.

Case 3.—The secretion of milk suddenly ceased in a woman soon after her confinement, and symptoms of meningitis quickly followed. These soon gave way under active treatment; but then the patient was attacked with general feverishness, accompanied with cough, the expectoration of rusty sputa, and other signs of pneumonic inflammation. This was succeeded by a slight attack of peritonitis; which was followed in its turn by the occurrence of a *phlegmasia dolens*. Now this succession of morbid actions, or rather of different localisations of the same disease, was observed to decrease progressively in intensity from the meningitis in the first place, to the inflammatory affection of the lower extremity, which eventually terminated by a slow resolution.

It is not unfrequent to observe the very reverse of what happened in the present case; viz. where the metastasis of the disease takes place from the less to

the more important organ, and ultimately proves fatal by the invasion of some vital part. A knowledge of such various localisations of the same morbid affection is of great importance for the right history, as well as for the successful treatment, of many cases of disease. Where a medical man has reason to suspect such a diathesis or state of system, his great object will necessarily be to keep the disease away, if possible, from those organs that are essential to life. As a remark of general truth, it may be stated that bleeding should be used under such circumstances with much greater reserve than usual, and that blisters and other external irritants are of more than ordinary utility.

In conclusion, M. *Tessier* frankly acknowledges that he cannot suggest any satisfactory explanation of these metastatic localisations of the same disease. Of this, however, he feels confident that the phenomena in such cases are certainly not owing to the absorption and mechanical admixture of purulent or other morbid matter with the blood, as is alleged by a number of writers in the present day.—*Gazette des Hôpitaux.*

Remarks.—It is very probable that M. *Tessier* carries his peculiar views on the subjects of phlebitis and purulent infection of the system too far; but it appears to us abundantly obvious that he has quite succeeded in showing that all the symptoms of the latter formidable affection may occur without the necessary co-existence of inflammation in any vein or veins. The cause of the disease in such cases is probably to be sought for in some morbid change of the entire mass of blood from the introduction of some deleterious matter, whether in the form of æriał miasm, or of poisonous fluid. In whatever disease there is a tendency to the occurrence of metastasis, or translation of the morbid action from one organ to another, we may reasonably, it seems to us, suspect the existence of some alteration or another in the blood itself. Is it not so in rheumatism?—in gout?—and again in that very class of diseases of which we have been treating in the present article?—*Rev.*

IMPORTANT LETTER ON THE CONTAGION OF THE PLAGUE.

This communication, coming from so respectable a quarter as that of the Director-General of the Quarantine Establishments of the Turkish empire (M. *Robert*) and one of the physicians of the sanitary council (M. *Marchand*), will be read with more than usual interest.

"In the Medical Gazette of last October (15th), there is an account of a work on the Plague, which its author, M. *Salle*, had submitted to the Royal Academy, and wherein he endeavoured to prove the non-contagiousness of the disease, and the consequent inutility of lazarettoes. For this purpose he has brought forward many assertions which truth compels us to say are utterly unfounded.

"Employed in the sanitary establishment of the Ottoman Empire, it appears to us a duty, which we owe to the profession, to rectify the statements which M. *Salle* has so authoritatively made, and to show that the data on which he has based his opinions are not at all trustworthy. For example, he says, 'That the last two years have been in all respects similar to the four or five preceding ones; that the plague rages regularly in Lower Egypt and Syria, in spite of the most strict quarantine regulations at Beyrout and Alexandria; and that, on the contrary, the rest of the Turkish dominions, and especially Constantinople and Smyrna, have been quite exempt from the pestilence, notwithstanding the notorious negligence with which the quarantine establishment has been conducted.'

"To this assertion we answer that, if the plague has raged for several years past in lower Egypt and in Syria, the cause will be found in the utter absence of a well-organised sanitary code in these two provinces, more especially in Syria, where

indeed there was no regular quarantine service before that country again came under the legitimate sway of the Sultan. That it continues to prevail there, is most probably owing to the still unsettled state of the province, and to the consequent difficulty of establishing, all at once, a system of prohibitory regulations affecting the transit of goods and the intercourse of the inhabitants.

"On the contrary, the other parts of the Turkish empire, and chiefly Constantinople and Smyrna, owe their exemption from the plague to the strictness with which the quarantine laws are carried into effect. During the course of last year, the pestilence was brought into the lazarettoes of these cities by ships from Alexandria, but was fortunately extinguished by the use of proper precautionary measures.

"The same remark may be made of the lazarettoes in Candia, Rhodes, Cyprus, the Dardanelles, and Salonica; in all of which places, the health has been more or less directly compromised by the arrival of infected vessels from Egypt—but, in each case, without wider diffusion of the pestilence.

"M. *Salle*, in a subsequent part of his work, says that, 'all the world knows that the young Sultan *Abdul-Medgid* has always set the *quarantinaires* at liberty, and treated them as he would do common prisoners, to whom he shows his royal favour on the occasion of any happy event.'

"This statement is utterly devoid of truth, as every official person at Constantinople can amply testify. It is true that, in 1839, when the sanitary service was imperfectly organised, and during the last moments of the late Sultan *Mahmoud* of glorious memory, a few days grace was granted to those who were then detained in the lazaretto of the capital; but, since that time, there has been no one instance of the remission of the established regulations in favour of even the most distinguished persons, as Muhib-Effendi and Rifaut Bey, or Said-Pacha, the son of Mehemet Ali, or Moustapha Pacha, the present minister of war. These and many other persons of not less note have remained in the lazaretto the full time appointed by the rules of the quarantine service.

"As to the notorious negligence with which this service is conducted, according to M. *Salle*, it is now, perhaps, scarcely necessary to say much. If, instead of drawing his information from uninformed or prejudiced quarters, he had looked into things with his own eyes, and if, at the same time, he had been less presumptuous towards his correspondents in the East, he would doubtless have arrived at very different conclusions. As many physicians, however, who have resided amidst the plague, are and have been anti-contagionists, we are not, as a matter of course, at all surprised that M. *Salle* should hold the same opinion.

"But we have no hesitation in saying that it is our strong and decided conviction—a conviction that is founded on no little experience of the disease—that the immunity in the present day of many places in the Turkish empire (which a few years ago were not unfrequently visited with the pestilence) is entirely attributable to the system of quarantine regulations that have been recently adopted.

"In 1833, when the sanitary service was first definitively organised, the plague was then existing at Rousteink, Totrakan, Silistria, Philippopoli, and at Choumla and Varna—towns in European Turkey, where, although the same local and atmospheric conditions continue to exist now as they did then, the disease has not been known—thanks to the precautions that have been taken—during the last three years. The result of this pleasing change has been that the Austrian government have greatly relaxed the rigour of their quarantine on this frontier, and now grant free *pratique* to travellers, &c. coming from any part of Turkey in Europe.

"We may also inquire, how comes it that in our own country, Marseilles, which has often suffered so severely from the pestilence, has been quite exempt from it, notwithstanding the constant communication which it has with different parts

in the East, ever since it had a well-established quarantine? and that Greece, too, should have so well escaped of late years, since it has become an independent kingdom?

"Let it not, however, be supposed, from what we have now said, that we approve, in all respects, of the existing quarantine regulations of different European countries. While we contend that it is by them alone that we can reasonably hope to arrest the devastations of the plague, we willingly admit that a reform of the sanitary administrations is generally wanted, and that much of the rigour of the existing rules might be abated with no risk to health, and with great benefit to general commerce."—*Gazette Medicale.*

ON THE HEALTH OF THE LAZARETTO AT ALEXANDRIA, DURING 1842.

M. *Grassi*, head physician of this establishment, has published a report of its sanitary condition during the past year: from it we derive the following particulars:—

Although the number of persons attacked with the pestilence this year has been much less than during the preceding one, the severity of the disease and the ratio of the mortality have been nearly the same. The treatment, too, pursued was very similar as on former occasions, with the exception of bleeding being discontinued; both Dr. *Grassi* and Dr. *Colucci*, his colleague, finding it rather hurtful than otherwise.

Of 97 plague patients admitted into the hospital, 62 recovered, and 35 died: of the latter, 14 sunk after being seen once, and 1 died during the period of convalescence, from a complication of internal lesions. Of 166 patients attended at their own homes, no fewer than 151 died—a very great mortality; attributable no doubt to the unfavourable circumstances in which the sick were placed, and the want of the many advantages which are found in a hospital.

The course of the plague at Damietta, too, affords another striking confirmation of the circumstance now mentioned. None of the patients in this city were in such a position as to oblige them to go into the hospital; and hence, of 97 persons attacked and attended at their own homes, only 26 recovered.

M. *Grassi* appears to be strongly convinced that the plague is not so often spontaneously engendered in—whether from the overflowings of the Nile, the climate or soil of the country, the habits of the people, &c. as many writers have alleged—as it is conveyed to Egypt, and then diffused by contagion from one sick person to another.

"It is mathematically demonstrated," says he, "that, about the middle of the year 1834, it was imported into this city (Alexandria)—at that time, and for nine years before, perfectly healthy—by a Greek vessel with passengers from Cyprus and Jerusalem, where the disease had been prevailing. Since this period, it has been reproduced here every successive year, simply because the germ of the poison has been retained in one or two spots, from which it has extended itself elsewhere."

M. *Crassi*, like M. *Robert*, (whose opinion we have given in the preceding article) is quite assured, in his own mind, of the great contagiousness of the plague, and that the only hope of keeping it out of any district is by a judicious system of quarantine regulations. "If," says he, "it follows from the statements now made that, even after all necessary precautionary measures of sequestration have been taken, the plague not unfrequently is observed to re-appear in a place, it deserves to be remarked that (according to the results of my observation) it has never broken out after the measures, which have been pointed out, have been enforced for five days. From this fact, we might infer that the period of incubation of the disease does not exceed this period of time—an infer-

ence that agrees with the opinion recently announced by M. *Auber* at the Academy of Sciences."

To avoid as much as possible the chances of the physician himself conveying the poison of the disease from the Lazaretto to the inhabitants of the city, the following precautionary measures are adopted:—"Before entering the hospital, we have to pass along a terrace that is assiduously watered. All the stairs too are kept in the same state. The wards, in which the patients are lying, are perfumed and continually ventilated by means of numerous windows in all the sides of the building. The beds are kept considerably removed from each other; and the physician, accompanied by the apothecary, visits each *at the legal distance;* an officer of the establishment being always in attendance to see that all the sanitary regulations are strictly attended to."—*Il Filocamo.*—(*A Maltese Journal.*)

ANTHRAX CAUSED BY THE CARBUNCLE IN CATTLE.

The following remarks are from the pen of Dr. *Müller* of Hombourg, who, in his opening paragraph, says, "For two and twenty years I have been practising in a district where anthrax, arising from the carbuncle in cattle, is of such frequent occurrence that the number of cases which I have treated exceeds a hundred."

The disease in the human subject has almost invariably been observed in those seasons, when horned cattle were affected with the carbuncle, or what some authors have called the "malignant pustule." I have seen only one case in which it was attributable to the application of the nasal mucus of a diseased horse: this occurred in a groom, who nearly lost his life from the consequences that ensued. In the majority of my cases, I have been able to trace the operation of direct infection—usually in the hands of the peasants—from the contact of the blood of the diseased cattle, during the process of skinning them. In a few cases, the disease arose from a slight wound of the finger, while bleeding the animal during life; and in others from the pricks of gnats and other insects, which had previously been settling on the dead carcasses. On no occasion did it ever seem to be produced by merely eating the flesh of the diseased cattle.

The early symptoms are usually very simple. The person observes a small pustule over the affected spot; this is accompanied with a feeling of slight heat or itching in the part, but nothing more; and for several days there is probably no change. But then the surrounding cellular tissue begins to be affected with a diffused hardness, and the integuments become covered with numerous pustules, which are at first white and more or less transparent; then opaque, and of a yellow colour; and lastly put on a livid appearance. The induration increases, and the tubercle, always diffused, becomes larger, until it acquires the size of a pigeon's egg, or even sometimes of a man's fist. The character of the surrounding swelling is in part œdematous, and in part erysipelatous.

It has been usually at this stage that my patients have applied for advice, so that I have not often been able to use the caustic with the view of destroying the characteristic tubercle, while it was yet small—a plan of treatment which, on more than one occasion, has perfectly succeeded in my experience. I have never practised the excision of the part, as recommended and adopted with great advantage, we are told, by Dr. *Wetzer* of Bonn.

The most dangerous seat of the malady is the face; and unfortunately this is of by no means rare occurrence. I have seen many patients die from the effects of the swelling extending inwardly to the throat, and causing suffocation, before any typhoid fever had supervened. Often in those alarming cases, neither bleeding from the arm—which is frequently of the greatest service, if resorted to sufficiently early—nor deep incisions in the swollen parts, so as to cause profuse

bleeding will avail anything; and the medical man has the miserable task of seeing his patient asphyxiated, without being able to relieve him. (Might not tracheotomy be practised with advantage?)

Dr. *Müller* says that it is usually a favourable symptom when the centre of the tumour becomes gangrenous; for then the surrounding tumefaction—which, when the face is the seat of the disease, often extends up along the scalp, and down even to the chest—generally subsides more or less, and the pain is considerably relieved. If a line of demarcation is formed around the sphacelated portion of integuments, the case will, in all probability, do well. In general, the formation of sinuses (fusées de pus) beneath the dead cellular tissue has in my practice been prevented by the use of timely incisions, and by the removal of the gangrenous parts as early as possible. In one case, where the adoption of these means was delayed, it was necessary to make a counter-opening over the top of the sternum for a carbuncle on the cheek; and, in another case, at the elbow for one on the hand. In the latter case, the arm became almost as large as the thigh of the patient, and the swelling extended even to the integuments of the chest, so that the patient experienced much difficulty and distress in breathing. In both cases, however, the swelling quickly subsided after the gangrene had made its appearance; and ultimately a complete cure was effected. In the second one, the entire surface of the arm up to the shoulder was covered with livid spots, like large petechiæ, which yielded to the application of warm bread poultices prepared with a concentrated decoction of cinchona. Although the local disease was so formidable, the attendant fever was not very severe, and not of a typhoid type; while in other cases, in which the local affection was much less threatening, the patients have sunk under the constitutional disturbance.

Treatment.—Our author very distinctly says, that in scarcely any case did moist applications answer well. Poultices usually increased the swelling of the parts; while dry herbs in a bag appeared to agree much better. We have already said that, if the infected spot be excised or destroyed with caustic potash sufficiently early, the future mischief may very generally be prevented. When the gangrenous process has been fairly established, it is almost always proper that one or two deep incisions should be made—as in the treatment of ordinary spontaneous anthrax—in order to give issue to the purulent matter and sloughy cellular texture underneath, and thus obviate the formation of sinuses in the neighbourhood. "Since I have known," says Dr. *Müller*, "the utility of chlorine (chlore) against the effects of the bites of serpents, I have tried it in severe cases of carbuncle, and always wish good consequences. In some of the worst cases that I have seen, I have trusted to the use of chlorine, after an emetic, (which he generally administers at the commencement of the treatment,) and have had ample cause to be well satisfied. The dose, which I usually give, is from half a drachm to a drachm every hour or two, either alone or mixed with water or other vehicle. As an external application, I employ an ounce of the chloruret of lime with four or six ounces of chamomile flowers, introduced into a bag, which need not be heated when applied: it usually retains its virtues for two or three days, as the odour will testify.

"I do not propose these remedies as specifics; far from it. All that I say is, that they have proved more useful in my practice than any others which I have ever employed."—*Annales de la Chirurgie.*

INTERESTING CASE OF DEEP-SEATED ABSCESS IN THE GROIN.

In the last number of this Review, p. 550, the reader will find the history of

some interesting cases of suppuration occurring in unusual situations, by Mr. *Henry James Johnson*. The following is in some respects not unlike No. 4.

A middle-aged man, of a healthy constitution, and who had never exhibited any symptoms of coxalgia or spinal disease, was suddenly seized, while in the act of stooping down to lift up a burden, with a sharp pain in the right groin. The pain did not last above a minute; but it was followed by a sense of a dull and deep-seated uneasiness in the part, extending downwards for some way along the inner side of the thigh, and upwards in the direction of the lumbar vertebræ. Flexion of the thigh on the pelvis increased it; and the general movements of the limb were considerably impeded. The man's health now becoming not so good as it used to be, and the local uneasiness not mending, he entered the Hôtel Dieu under the care of M. *Roux*. At this time there was a firm swelling, of about the size of the fist, in the groin, apparently right under Poupart's ligament. The symptoms were obscure, and it was not easy to determine exactly the nature of the case. The patient, however, after being some time in the hospital, was seized with a shivering fit; and next morning the swelling was found to be more diffused, and an indistinct sense of fluctuation was perceptible in it. The question now for consideration was, where was this abscess exactly situated? Was it in the sheath that envelopes the psoas muscle and the crural vessels and nerves? or was it connected with the sheath of the spermatic cord? and, if the former were the case, was there any reason to suspect the presence of lumbar disease? After well weighing all the circumstances of the case, it was deemed most probable that it was an idiopathic abscess situated in the sheath of the psoas muscle, and caused by the accidental rupture of some of its fibres, at the time that the patient experienced the sharp pain in the groin. After the lapse of a few days, the swelling acquired a larger size, and was then freely opened with the knife: it continued to discharge pretty freely for about a fortnight. At this time the integuments over the trochanter began to become swollen and puffy, and it was therefore suspected that the abscess might extend in this direction. This was found to be the case by introducing a probe into the wound in the groin; the instrument passed down deep among the muscles, so that its point could not be felt outwardly. It was deemed prudent that a counter-opening should be made, to prevent the burrowing of the matter. The incision was necessarily deep, to reach the extremity of the sinus: a large quantity of matter flowed out, when the opening was made into it. A tent was introduced to prevent the adhesion of the edges and keep the passage free. In the course of a few days, the discharge ceased from the wound in the groin, and came only from the one over the trochanter. It gradually decreased in quantity, and everything promised a speedy cure at the time when the report of the case was published.—*Gazette des Hôpitaux*.

M. ORFILA ON A NEW ANTIDOTE OF CORROSIVE SUBLIMATE.

M. *Mialhe* recently announced to the Royal Academy of Medicine that, having taken a solution of the corrosive sublimate into his mouth, he found that the disagreeable taste was almost immediately dissipated by washing his mouth out with some proto-sulphuret of iron recently prepared and mixed with water. From this circumstance he inferred that the latter substance might act as an antidote of the former, and decompose it, giving rise to the chloruret of iron and the sulphuret of mercury—compounds which do not act poisonously on the living body. To ascertain the correctness of this opinion, I instituted, says M. *Orfila*, the following experiments.

a. I prepared 100 grammes of the proto-sulphuret of iron by decomposing the proto-sulphate of the metal with the hydrated sulphuret (sulfhydrate) of

ammonia. The mixture was put into a large stoppered flask, kept constantly full of water, in order to avoid the contact of the atmospheric air—which would not have failed to have converted the proto-sulphuret into a per-sulphuret. The precipitate having all fallen down, I decanted off the liquid with a syphon, and then I filled the flask with water and corked it securely. When by repeated washings—always carefully excluding the contact of air—the liquid was found to contain no traces either of the sulphate of iron or of the sulfhydrate of ammonia, I gave a middle-sized dog about the tenth part of the proto-sulphuret suspended in water, and then immediately afterwards 60 centigrammes of corrosive sublimate dissolved in 100 grammes of water: the œsophagus of the animal was tied, and kept so for 12 hours. With the exception of several dejections from the bowels, it did not exhibit any of the usual symptoms of poisoning with the sublimate, and appeared on the whole to be very little inconvenienced, (not even with a ligature around its œsophagus!) On the next and following days, "il se portait à merveille." A similar experiment was performed on another dog, and with similar results.

b. I introduced, by means of an elastic-gum tube, into the stomach of a dog, 60 centigrammes of corrosive sublimate, dissolved in 100 grammes of water, and immediately afterwards a quantity of the proto-sulphuret of iron similar to what was used in the first experiment: the œsophagus was tied, and kept so for 12 hours. The animal did not suffer more than in the first instance, and next day it had perfectly recovered.

c. The same quantity of the poison was given to another dog, and ten minutes were allowed to elapse before the dose of the proto-sulphuret was administered; in other respects the animal was treated as before. After the lapse of four hours, the ligature was removed from the œsophagus. The animal died in the course of the night, having exhibited all the usual symptoms of poisoning with corrosive sublimate. The conclusions I draw from these experiments are—

1. That the proto-sulphuret of iron completely neutralises the poisonous properties of corrosive sublimate, if it is administered in a sufficiently large dose immediately after the ingestion of the latter.

2. That, like the best accredited antidotes, it fails, if it be not administered for 10 or 15 minutes after the poison has been swallowed.

3. That—while we admit that the proto-sulphuret decomposes the corrosive sublimate much more energetically and efficiently than albumen does, and that therefore it should be preferred whenever it is at hand, so that it can be administered immediately after the poison—the medical man should never lose any time in waiting for it, but at once give the white of eggs blended with water freely in all cases of poisoning with this salt of mercury.—*Journal de Chimie.*

REMARKS ON THE ART OF DIVING.

It is well known to every one that, of late years, the art of diving and remaining under water for considerable periods of time has been attracting much notice in various countries of Europe. As the medical man cannot fail to take an interest in everything that appertains to human life, in the different situations in which men may be placed, a few remarks on this subject may not be unacceptable.

It is found that there is a great difference among men of equally robust and healthy constitutions as to their ability of becoming expert divers. Physical energy is not sufficient for this purpose; a certain moral strength and resolute equanimity appear to be of much greater importance. The six divers, who have been engaged in the wreck of the Royal George at Spithead during the last three Summers, were selected from the corps of sappers and miners as seemingly the best fitted for the purpose by their qualities of mind and body; but the effects

of the submarine labour have been far from being alike in all. Some experienced a most distressing pain in the ears and a tendency to bleeding from the nose. Lieutenant *Hutchinson*, who superintended these operations, suffered so much in this respect, that, although he made repeated efforts to overcome them, he never was able to remain for any considerable time under the surface. But, apart from the inconveniences felt at the time by submarine occupations, it has been very generally found by the men that their constitutional health and vigour have been very sensibly impaired, after they have been working for some time as divers. They become much weaker than they used to be, and are not fit for nearly the same amount of labour and fatigue, as formerly.

The season of their occupations is from May to October; and they are usually engaged eight or ten hours a day, remaining under water from half an hour to between two and three hours at a time. Most of their work is done between the full ebb and flow of the tide; at high water, the force of the stream is so great that considerable interruption is experienced. The flow of the tide is felt both more early and more powerfully at the bottom of the sea than at the surface; its force it often so great that is would upest the men, if they did not hold fast by some object near. When they come up, after having been down for an hour or so, they generally look pale and exhausted, although they may not feel so. They always wear flannel dresses under their water-proof clothes, to protect them against the cold to which they are necessarily exposed. As the air which they breathe through the tube, communicating between the helmet around their heads and the diving bell, is supplied to the latter by means of a powerful forcing pump, it is obvious that it, (the air,) in order to preserve a due equilibrium, must be at a pressure or condensation equal to that exercised by the superincumbent mass of water on the workman below. The quantity of the air thus transmitted by the tube greatly exceeds, as a matter of course, that which is necessary for respiration, and the superfluity escapes readily through a valve in the helmet into the sea. During the whole time that the diver is under water, there is a continual rising up of air-bubbles to the surface; this expenditure is as regularly supplied by the action of the forcing pump.

To enable a diver to descend with ease and rapidity to the bottom of the sea, he finds it necessary to carry a considerable weight with him. Besides wearing very heavy shoes, he has usually a thick plate of lead on each shoulder; and notwithstanding this extra-weight—amounting often to 120 or 130 pounds—he finds himself quite as light and unincumbered as only with his ordinary dress in the air. This is the natural effect of being placed in a denser medium.

The effects of the highly compressed air on the respiration have not hitherto been very satisfactorily examined by any physiologist; but it would seem that divers do not experience any decided difficulty of breathing, even at considerable depths. What seems curious, they find that they can sing (in a manner), but that they cannot whistle. They are able partially to converse with each other, by raising their voices as high as possible; the sound produced is then heard as if some one spoke in a very low tone.

As may be imagined, accidents are apt to occur from an interruption of the supply of fresh air or of the means of communication between the divers and the surface. Some time ago it happened that, when a man had been down for nearly an hour, the flexible air-tube, yielding to the great pressure on its sides, burst a little above the surface of the water with a loud whistling noise. One of the attendants immediately stopped the hole with his hand, and an attempt was made to draw the diver up without delay; but a minute and a half were lost before this could be effected. As soon as the helmet was taken off his head, it was found that blood was flowing from his ears, nose, and mouth, and that his face and neck were much swollen and discoloured; he lay in a semi-conscious or dozing state. There were large echymosed patches on the shoulders and upper part of the chest; and even the conjunctivæ of the eyes were partially

infiltrated with dark-coloured blood. The patient vomited a little blood; his pulse was regular, and his breathing every now and then interrupted with deep heavy sighing. He was bled, and a turpentine enema was administered; the congestive symptoms gradually abated, and, in the course of two or three weeks, the man was nearly quite well.

Similar accidents have occurred on several other occasions. The phenomena exhibited in such cases evidently depend upon the circumstance, that if from any cause the pressure of the supplied air within the chest is suddenly withdrawn, that of the circumambient water on the parts of the body not protected with the helmet is no longer equipoised, and the blood is forced towards the head and neck with a power proportioned to the pressure, or, in other words, to the depth of the water. It was calculated that, in the case of the diver just alluded to, the pressure of the water on his body was equivalent to that of three atmospheres—a pressure which, before the occurrence of the accident, was counterbalanced by the condensed air, that was sent into the helmet by means of the forcing pump.

The recent experiments of Dr. *Payern*, which go to show the possibility of remaining under water for many hours without the renewal of the air, have excited no little interest among scientific men. It still remains however to be determined how far they are to be depended on. From a notice of them in a number of the Revue Britannique, it appears that the means which the Doctor uses are very simple; viz certain quantities of potash to absorb the carbonic acid evolved during expiration, and of chlorate of potash which at a moderate temperature gives out a considerable portion of oxygen.—*Gazette Medicale.*

A SIMPLE MEANS TO PREVENT OR STOP NERVOUS COUGHING.

There is a curious and rather interesting paper with the above title in a number of the French Medical Gazette for February, and from it we have extracted the following passages. M. *Diday*, the author, makes a few prefatory remarks on the power which a mere strong effort of the will often gives to resist the impulse of a strong sensation, (*besoin*, the French would say.) like that of sneezing or coughing; and he goes so far as to assert that "it is always possible to prevent a fit of either by an energetic and sustained effort of the will, *if this be done from the very commencement.*" In old established coughs, as a matter of course, such an attempt is quite inadmissible, at least with any reasonable hopes of success. Whenever, indeed, the cough depends upon the presence of any matter to be expectorated, it is obvious that the effect cannot be checked as long as the cause remains. It is therefore almost exclusively to coughs depending upon nervous irritation that the following remarks are intended to apply.

The attempt also must be made before the annoyance has got, as it were, root in, or hold of, the system. At first, it is especially necessary that the patient acquire the habit of drawing in his breath slowly and not too deeply, and that he should avoid all hurried and irregular inspirations.

That most people have it in their power to arrest, at least to a certain extent, the frequent recurrence of fits of coughing and sneezing is obvious from the very circumstance that these acts are not unfrequently the effect of mere—we might almost say *wilful*—imitation; as in churches, lecture-rooms, &c.; and we know that, whatever may be acquired by the will, may be as readily checked by it. Dr. *Didav* tells us that one of the most eminent physicians of La Pitié hospital is in the habit of bawling out, on entering any of the wards, "I will have no coughing during my visit; whoever cannot stop himself, shall be put on low diet;" and true it is that all the patients are wonderfully still as long as his visit lasts. It is an old saying, that very few people know what they can do, until they try;

and every one can testify from his own experience, that when the attention is suddenly engaged elsewhere, he ceases to feel a desire to some natural act, as to sneeze, to pass urine, &c., although this desire or *besoin* had been urgent just before.

M. *Diday* gives the following account of his observations.

"The first idea that occurred to me on this subject was suggested by what I observed to take place during sneezing. It is well known to many people that this act may be very often prevented by rubbing the edge of the eyelids or of the lips, or the tip of the nose, with your finger, when the disposition to sneeze is felt. I have repeatedly advised this expedient to my friends and patients, and it has almost invariably succeeded. In one case in particular, that of a young priest, who had been for some time much annoyed by the almost invariable recurrence of fits of sneezing that were apt to come on during his performance of mass, this simple means afforded a speedy and complete relief. In the performance of certain delicate surgical operations about the face and throat, such as that for hare-lip, fissure of the palate, &c., it is a matter of the greatest consequence that the patient should avoid all movement of the parts in the neighbourhood, and nothing disarranges everything so much as a fit of coughing or sneezing.

Now as the latter of these acts—which by-the-bye is nothing else but a cough of the nasal passages and of the back of the throat—may be so easily and effectually controlled in the manner we have just mentioned, we are naturally led to expect the same in the former; and so I have found it to be the case not only in myself, but in several other persons who have tried the experiment under my direction.

By merely rubbing pretty smartly with the point of a finger the edge of the lips or of the eyelids, or the tip of the nose, when the first intimation of the 'besoin' to cough is felt, the act may often be entirely prevented. When this feeling returns very frequently, it will be found useful to employ the revulsive friction first on one of the parts, and then on the others in quick succession"

M. *Diday* says that the object in the rubbing in is not to supersede the exercise of an effort of the will, but only to aid and augment its efficacy. He accounts for its effects on the principles of the excito-motory doctrines of *Marshall Hall* and *Müller* respecting the nervous system.

The impression, made on the extremities of certain branches of the trifacial nerve, acts as a sort of derivative or counter-irritant to the morbid sensibility of the extremities of the glosso-pharyngeal and pneumo-gastric nerves. We often observe the effects of this revulsive action in a somewhat analogous case, that of nausea; for we know that the disposition of the stomach to take on an inverted action may often be checked by rinsing the throat with a mouthful of spirits. If the stomach be not too much overloaded, this simple means will not unfrequently prevent vomiting. Here then is an instance where, by making a peculiar lively impression on certain sensory nerves, a tendency to muscular contraction—or, to use the language of a modern school, an excito-motory action—in another part, more or less removed from it, is prevented and controlled; and yet every one knows that a different kind of impression, that of titillation, made on the same organs, is one of the surest methods of exciting this very sympathetic action. Much, therefore, evidently depends upon the kind or degree of the irritation produced. While gentle tickling promotes, firm rubbing will often serve to check a sympathetic movement in a distant part.—*Gazette Medicale.*

On the Difference of the Respiratory Movements at different Ages, &c.

We are not aware that the phenomena, to which MM. *Beau* and *Maissiat* allude in the following remarks, have been sufficiently dwelt upon in any of the recent works on physiology; and yet they are of that practical importance as to merit the attentive consideration of all medical men. The gist of their observations is that the type of the respiratory movements, or, in other words, the manner in which these are performed, varies not a little in the two sexes, and also at the different periods of life. The following abstract of their elaborate memoir will enable our readers to judge of its contents.

They describe what they call three distinct types of the respiratory movements, viz. 1, the abdominal type; 2, the inferior costal type; and 3, the superior costal type. In the *first*, the cavity of the chest is increased during inspiration, chiefly by the descent of the diaphragm and the protrusion of the abdominal muscles, the ribs being nearly motionless;—in the *second*, by the elevation and expansion of the lower six ribs, the movement of the upper ones becoming less and less considerable as we ascend, till it ceases altogether in the second and first;—and in the *third* chiefly by the elevation and expansion of the upper ribs, the movement becoming less and less marked as we descend, till it nearly ceases entirely in the lowermost. In the second variety, the lower half of the sternum is much more moved, *i. e.* elevated and depressed, than its upper half; while the reverse of this is the case in the third variety.

In the majority of cases, each individual has, what may be called, his peculiar type of respiratory movements; and this seems to be remarkably constant at all times. One person breathes chiefly by the abdomen, as to speak; another by the lower ribs; and a third by the upper ones. A good deal however depends on age, and not a little on sex also, as we shall now endeavour to explain.

In the early period of life, and often indeed until three or four years of age, the respiration usually exhibits the abdominal type: the ribs are scarcely moved at all; and when the breathing is very much oppressed, as in many cases of pneumonia, the cartilages of the lower ribs are observed to be drawn somewhat inwards during each act of inspiration.

After this period of life, the three types begin to be marked in a more or less distinct manner, according to the individual's sex and constitution. The superior costal type is observed particularly in girls; while the other two types are found in nearly equal frequency, in boys. As a person advances in life, we find that the first-mentioned type becomes more and more predominant in females; and one of the latter types more and more so in males.

The superior costal type in the female sex is readily recognisable not only in our hospitals, but in any assemblies of women, and more especially in actresses on the stage. Who has not observed that the upper part of the thorax, including the sternum and clavicle, is often, during the representation of strong mental emotions, most strikingly elevated and depressed? Nothing at all similar is ever witnessed in male performers. It may be supposed that this peculiarity in women is in some degree induced by the wearing of stays and the consequent compression of the abdomen and the lower part of the chest. But, although this absurd and most pernicious custom* may unquestionably increase the degree or amount of the peculiarity in question, it certainly does not give rise to it; for we

* To do all manner of justice to the ladies, we must frankly admit that our authors are by no means so much opposed to the use of corsets as most medical men are. "We may here state *en passant*," they say "that the use of the corset is not nearly so hurtful to females, as is generally imagined. Indeed it

find it to exist in girls before they ever wore stays, and in countrywomen who never wear them at all.

One important end gained by the respiration being superior-costal in the female sex is abundantly obvious—the breathing is thus much less disturbed than it otherwise would be during the period of pregnancy. This point, although seldom or never alluded to in modern lectures or writings, has not escaped the attention of some of the older physiologists. *Boerhaave*, in his Prælectiones, thus makes mention of it: "Hinc in fœminis inspirantibus sternum rursum et oblique extrorsum vertitur, totusque thorax quasi assurgit; hinc etiam tumente abdomine, liberius respirant" *Haller*, the great commentator of *Boerhaave*, is still more exact and minute in his description of the peculiarities of the respiratory movements in the two sexes: "Considerate puerum anni unius et puellam ejusdem ætatis in eodem lecto unà dormientis, videbis in puellâ, quando inspirat, totam thoracis molem ascendere versus jugulum; in puero verò inspirante thoracem et claviculas vix moveri. In viro adulto pectus vix movetur equidquam, dum respirat; in fœminâ totum sursum trahitur, ut à diaphragmate recedat. Ergo vir abdomine maxime respirat, fœmina thorace. Nisi hanc fœmina diversitatem natura fecisset, gravidæ perpetuâ dyspnœâ laboravissant æque ac viri hydropici."

It would seem that most of the authors of the present day have quite overlooked these interesting peculiarities in the phenomena of the respiratory movements, so well described almost a century ago. It has been generally supposed that the movements are nearly alike in all persons; and hence one of the chief objects of inquiry among modern physiologists has been to determine the *where* and in what direction the principal enlargement of the chest takes place. We cannot therefore be surprised at the difference of opinion on this point. While M. *Gerdy* maintains that the greatest enlargement of the thoracic cavity occurs in a transverse direction on the level of the lower ribs, we find MM. *Hourmann* and *Dechambre* infer from their observations—on the old female inmates of the Salpetriere hospital—that it is in the upper part of the chest, and that, "in this general movement of ascension, the sternum is, on an average, raised from eight to twelve lines." And what is the general conclusion to which they come? That "in proportion as a person advances in years, the motory powers of respiration—and more especially those which tend to increase the transverse dimensions of the chest—become considerably impaired in their energy." It is scarcely necessary to say that the mode of respiration, described by these gentlemen, is not the result of age, but is natural to the female sex. It is however much more conspicuous in young than in old women.

MM. *Beau* and *Maissiat* proceed to notice the peculiarities of the respiratory movements in different animals; for the type, so to speak, is far from being alike in all. In the rabbit, the horse, the cat, &c. it is chiefly abdominal; while in the dog, it is inferior costal in a very marked degree. In no animal is it superior costal, at least in the natural and healthy condition; and perhaps for this reason that the alternate elevation and depression of the upper ribs and of the sternum would have interfered not a little with the movements of the fore legs in running. This mode of respiration may therefore be regarded as peculiar to the human race, and more especially to the female sex.—*Encyclographie des Sciences Medicales.*

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may almost be asserted that they are, so to speak, organised for the wearing of this piece of dress (!) On the other hand, it is an absolute physiological absurdity (contresens) for men to wear stays; for their breathing is chiefly by the lower ribs and the abdomen."

PULMONARY EMPHYSEMA: DISCUSSION AT THE ROYAL ACADEMY.

The pathology of this disease is still a subject of dispute among medical men; and therefore the recent discussion at the Royal Academy, in which many of the most experienced physicians of the French metropolis took a part, was attended with more than usual interest. The discrepancy of opinion has most probably arisen from the circumstance of certain writers alleging, or, at all events, seeming to imply that its proximate cause, or producing lesion, is always the same; whereas this unquestionably varies not a little in different cases. In some, it seems to depend on a mere abnormal dilatation of the pulmonary vesicles, (these having lost their natural elasticity,) or in a junction at the same time of two or more of these into one, in consequence of a partial rupture of their thin parietes. In others, along with this dilated state of the air-cellules, there seems to be a greater or less degree of thickening of their mucous lining—the result of chronic bronchitis, or, as it is usually called, catarrh; while in a third set of cases, the inspired air has become extravasated into the inter-vesicular cellular tissue of the lungs, in consequence, no doubt, of a sudden giving way of the air-cells from their over-distension. This last kind of pulmonary emphysema is almost always the result of a violent exertion, by which the respiration has been much embarrassed, and during which the inspired air has been forcibly held to enable the individual to put forth more than usual muscular strength. Hence it is more frequent in horses than in any other animal, or than in man himself; but in the latter it has been not unfrequently observed during some extraordinary effort of the body, or some violent emotion of the mind.

The two first-named kinds of the disease are of much slower and more gradual development. They are very frequently associated with some other lesion of the respiratory apparatus, or of the heart and great blood-vessels. Indeed whatever tends to embarrass the natural soft and regular play of the lungs is extremely apt to be followed by a greater or less degree of dilatation of the air-cells; and the reason of this is abundantly obvious.

The breath is often held much longer than it is in health;* the minute cells are more dilated than usual, in consequence partly of the air becoming expanded from the heat of the body; and thus the elasticity of the vesicles is gradually more and more impaired. If their mucous lining be somewhat thickened at the same time, and if there be also, as is generally the case, an increased secretion from its surface, we can readily understand the cause of many of the symptoms in old and obstinate lung complaints.

As will afterwards appear, objections were made to some of these positions by different members of the Academy, and we must admit that the objections in certain cases were very reasonable. However this may be, the conflict of opinions, on any question of science can never fail to be attended with good, provided there be no unnecessary rambling of discourse, and no presumptuous indulgence in fanciful theories.

We have omitted to mention that the discussion arose on receiving a report, drawn up by M. *Adelon*, upon a paper of Dr. *Prus*, in which this physician endeavoured to shew that pulmonary emphysema is not unfrequently the direct cause of sudden death. On this point all the speakers—with the exception of two, the reporter and M. *Ollivier*—expressed their dissent from the opinion of Dr. *Prus*; the general impression being that this affection of the lungs, though

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* M. *Collard* mentioned that he had seen emphysema of the lungs induced in young men, who were passionately fond of smoking, and had acquired the power of retaining the smoke of the tobacco for an unusual length of time.

often a most distressing and generally an incurable complaint, is seldom dangerous *per se*. The veterinary authorities took nearly the same view of the subject. M. *Barthelemy*, however, one of the highest, distinctly asserted that he had seen one, if not two cases, where sudden death in the horse was caused by an attack of pulmonary emphysema. The same may therefore be supposed to be possible in the human subject under particular circumstances; a rent takes place in some of the vesicles; the air is rapidly effused into the inter-lobular cellular tissue, causing great compression of the vesicles, and consequent serious embarrassment of the breathing. Now this is most apt to occur either during, or immediately after, some violent exertion, when—be it remembered—the heart is acting furiously and the respiration is hurried and laborious. Under such circumstances, we may readily suppose that a slight additional impediment will suffice to induce a rapid asphyxia.

It has been too much the fashion for the last twenty or thirty years, (when such exclusive attention has been paid to a purely *material* and visible pathology,) to attribute most cases of asthma to pulmonary emphysema, or to some other organic affection of the lungs. M. *Ferrus* exposed the fallacy of this idea with great ability, and pointed out that disordered innervation is one of the most important elements in the history of this disease. All unprejudiced pathologists must admit that it is often impossible to discover the slightest deviation from the normal structure of the lungs in those, who have long suffered from asthma. M. *Ferrus* is surely therefore quite right in regarding the disease as (often at least) a genuine Neurosis. He is also of opinion that, in the cases where sudden death has been attributed to emphysema of the lungs, a nervous affection of this sort had very seriously complicated this mechanical cause of disturbance.

"The symptoms" says a most judicious writer in the French Medical Gazette, "attending the morbid affections of the chest, as well as of other regions of the body, can be submitted, only within a certain limit, to the explanations deduced from mere anatomical or physical interpretations. Beyond this point, it is in the vital activity which animates every organ, that we must seek for the reason of most of the phenomena that occur in disease—unless we are ready to declare with the mechanical physicians of old, that the living body is only an assemblage of hydraulic pipes, pulleys, and levers, or, with some modern wiseacres, to regard it as a mere perfect and admirably constituted steam-engine."

The most prominent symptoms of pulmonary emphysema are usually a hurried and embarrassed state of the breathing—in many cases, every now and then aggravated in paroxysms—and a dry troublesome cough; the auscultatory signs being a loud respiratory murmur, and the presence of sibilant and other dry *râles*. When air has become effused into the inter-vesicular texture, there is an unusual resonance of the chest on percussion.

From all this it is rendered highly probable that pulmonary emphysema is present, in a greater or less degree, in most cases of asthma or spasmodic dyspnœa—not indeed as the sole and essential element of the disease, but as one of several morbid affections that are very generally co-existent. We now give a very brief abstract of the more important remarks which some of the leading academicians made, upon the reading of the report on M. *Prus*' paper.

M. *Louis*.—I see no reason for believing that the disease, known by the name of pulmonary emphysema, is ever attended with danger to the life of a patient, however distressing and painful may be its effects. That sudden death may be produced by such a cause alone, I am scarcely prepared to admit: the co-existence of heart disease being of very frequent occurrence. Let it be well remembered that it is often exceedingly difficult to account satisfactorily for many sudden deaths, either by the symptoms during the life of the patient, or by the appearances discoverable on dissection. That the proximate or organic cause of pulmonary emphysema is an hypertrophied state of the pulmonary vesicles is cer-

tainly most probable: but the truth of this has not been positively demonstrated.

M. *Dupuy*.—It is now ten years ago since I proved by anatomical preparations that the seat of pulmonary emphysema is the inter-lobular cellular tissue of the lungs. By drying the lungs first, the dissection is rendered much more satisfactory. In many instances I have been able to shew most distinctly that there was an effusion of air 'hors des vesicules.'

M. *Bouillaud*.—I quite agree with M. *Louis* in his opinion that there is a close relation between emphysema of the lungs and organic diseases of the heart; the former is very frequently the effect or result of the existence of the latter. With respect to there being an hypertrophy of the air-vesicles in cases of pulmonary emphysema, we must admit that all analogy is strongly in favour of such an opinion. It is very often to chronic bronchitis that emphysema is consecutive; and, as it is the character of inflammation, wherever this be seated, to leave a thickened and hypertrophied state of the parts affected, we may reasonably suppose that such will be the case after an inflammation of the air passages. My experience quite confirms another remark of M. *Louis*, that there is seldom any danger from pulmonary emphysema *per se*, and that, however alarming the symptoms may be for a time, seldom or never is any case of sudden death attributable to this cause.

M. *Rochoux*.—A great deal has been said of Hypertrophy of the pulmonary vesicles; but has any one ever seen this state of the lungs? we deem not; it is only by reasoning, by analogy, that its existence is presumed; *voila tout*. Emphysema by itself occasions nothing more than merely a certain difficulty and embarrassment in breathing. It will never do to attribute to *it* the many serious alterations with which it is so frequently associated.

M. *Piorry*.—The most important question that we have to determine is this: when the pulmonary cells are much dilated, does the individual necessarily experience difficulty in breathing? But then we may ask, does not the air penetrate as well into a dilated cell as into one of the ordinary dimensions? and moreover, is it not the case that in ordinary breathing a part only of the lungs is called into play? Let us here observe that, in cases of emphysema, the *rale* is heard during the act of expiration, and not during that of inspiration; and moreover that the dyspnœa and other distress of the patient are always relieved by expectoration. In my opinion, the true cause of the embarrassment of breathing in emphysema is a constriction of the bronchial tubes; and certainly its most prominent symptoms are strictly in accordance with this view of its pathology. That sudden death should be caused by pulmonary emphysema alone seems to me to be scarcely probable.

M. *Renault*.—If the disease be of frequent occurrence in the human subject, it is still more so among horses. From a pretty extensive experience, I may confidently state that short-windedness is the most frequent and characteristic symptom of pulmonary emphysema during the life of the animal. I have never however been able to discover, even with the aid of the microscope, any appearance of thickening in the pulmonary vesicles. Emphysema not unfrequently occurs on a sudden and almost instantaneously: it is then the result of a rupture of the pulmonary cells, and of a consequent effusion into the interlobular cellular texture.* I have never known sudden death to be caused in such a way, nor

* There is manifestly a mighty difference between the dilated or—as it is most

have I read of such a case. (M. *Barthelemy*, however, another veterinarian authority, subsequently stated that he had witnessed an instance of almost instantaneous death from this cause.)

M. *Ollivier*.—The opinion of most of the preceding speakers that sudden death cannot be produced by mere pulmonary emphysema is, I think not quite correct. The following illustration of it occurred in my practice about six years ago. A youth received a blow from another in a fight; this so exasperated him that he rushed upon his opponent, and would have struck him down, had he not been restrained by the by-standers. He had scarcely walked forty steps from the place, when he suddenly fell down and expired. On examining the body next day, I was particularly struck with the circumstance, that when the cavity of the thorax was opened, the lungs projected fairly out beyond the ribs. This peculiarity was, it seems to me, owing to the effusion of air into the interstitial cellular tissue of the lungs. It is right that I should state that I knew nothing of the youth's previous health.

It appears to me that the greater number of sudden deaths are attributable to some lesion or another of the lungs. An interesting case, which occurred recently to me, may be worthy of notice. A man, in a fit of violent passion, fell down and expired. The only morbid appearance found on the dissection of the body was an excessively gorged state of the lungs, so that, on making an incision into them, the blood gushed out as from 'un boudin.'

M. *Blandin*.—Before we can accurately determine the anatomical seat of pulmonary emphysema, we should require to know exactly the normal structure of the lungs; and yet there is no little discrepancy of opinion among anatomists on this subject. The question at issue among some of the leading authorities in the present day is, whether the pulmonary tissue be composed of isolated vesicles, or of cellules which communicate with each other. As well as I can understand the subject, it certainly appears to me most probable that there is a simple dilatation of the air-vesicles in cases of pulmonary emphysema. A circumstance, which seems to confirm this view of the question, is that we cannot in the dead body press the air out of the *ampullæ*, which constitute the emplysematous distension.

M. *Roux* inquired of M. *Ollivier* if, in the interesting case which he had related, there was no appearance of air having become mixed with the blood in any part of the body. He alluded to a curious case which he had seen in company with *Bichat*, nearly forty years ago. There was brought to the amphitheatre for dissection, a body, which exhibited all the marks of a sudden and perhaps violent death. On opening the cranium, the cerebral arteries were found to be distended in part with bubbles of air. It was afterwards ascertained that the man had died during a violent and prolonged effort. *Bichat* supposed that some of the pulmonary septa had given way, and thus allowed the air to escape and become blended with the blood.* M. *Ollivier* replied to the question that no such traces had been observed in his case.

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absurdly called by most of the speakers—*hyperthrophied* state of the natural vesicles of the lungs, and the effusion of air into their inter-vesicular cellular tissue, in consequence of an accidental rupture of any of the vesicles; and yet these two very different states seem to be confounded together, as if they were the same affection. The case, narrated by the next speaker, was evidently one of traumatic emphysema, and not of vesicular dilatation.

* It deserves to be noticed that there seems to be in some cases spontaneous evolution of gas, or at least a rapid dilatation of the air which exists in all dead

M. *Rochoux*.—By a singular confusion in medical language, the same term, e m hysema, is applied to two very different morbid affections: viz. the dilatation of the pulmonary vesicles on the one hand, and the infiltration of air in the cellular tissue between these vesicles on the other. It is to the first of these states that I would restrict the appellation. If it was kept in mind that pulmonary emphysema is almost always coexistent with other diseases, either of the lungs or of the heart, physicians would be less surprised, than they seem to be, that sudden death should occur under such circumstances. When air becomes extravasated into the inter-vesicular cellular tissue, it must have the effect of compressing not only the air-vesicles themselves, but also the free circulation in the blood-vessels, and thus tend considerably to embarrass the respiratory and circulatory functions. This element in the symptomatology has not attracted the notice that it seems to merit. If the compression be very great, we cannot be much surprised that death may sometimes rapidly take place under such circumstances.—*Gazette Medicale.*

TWO OR THREE SCRAPS FROM GALEN.

M. *Dubois d'Amien's*, a physician of high literary as well as professional accomplishments, and whose name our readers may perhaps remember in connexion with that of the late M. *Double* as an ardent admirer of the classic authors, has of late been contributing occasionally a paper to the L'Experience on that portion of *Galen's* writings, which treats of the diseases of the nervous system. We have selected the following quotations and comments thereon, as a sample of M. *Dubois'* mode of treating his subject.

Prognosis in Apoplexy.

What says the old Roman on this important subject?

"We judge of the gravity of an apoplectic seizure by the degree of the disturbance in the respiration. Whenever this deviates much from the natural rhythm of its movements, it may be at once suspected that the lesion of the encephalon is very serious; if the deviation is inconsiderable, the lesion is most probably slight But the worst of all states is, when the respiration is irregular and intermittent (entrecoupé) and is performed with violent efforts."

This reflection is drawn from the observations which the author had previously narrated. He had pointed out, from the difference in the seat of the paralysis, the localisation of the mischief in different parts of the cerebro-spinal axis; from the disturbance in the breathing, he had concluded, that the lesion was seated above the cervical portion of the spinal marrow: and he had shewn that, if there was a paralysis of the face at the same time, it was infallibly in the encephalon itself.

Having elucidated these points, he next proceeds to discuss the subject of the prognosis of the disease, and shews with great ingenuity of reasoning, that the degree of the disturbance in the respiratory movements is by far the least fallible sign to be trusted to in this respect.

This opinion of *Galen* has been very generally adopted by subsequent writers on apoplexy, although lately M. *Rochoux*, in his work on the subject, has questioned its accuracy. But this gentleman seems to have mistaken the real expressions of the Roman physician, who nowhere attaches any over importance

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bodies, in consequence of speedy decomposition. This phenomenon appears to be more frequent in certain seasons and after certain maladies; especially when the death has been sudden, and the body is full of all the animal juices.

to the mere stertorousness of the breathing. That *Galen* is far from neglecting the consideration of other symptoms, independent of those exhibited by the respiration, will be seen by the following passage :—

"In the same manner as the existence of a paralysis of the whole body, with the exception of the face, indicates that the cause of the affection is seated at the origin of the spinal marrow, so the occurrence of general convulsions leads the physician to the same conclusion, provided always the face remains unaffected; but if *it* also becomes implicated, we may reasonably infer that the mischief has its seat higher up, viz. in the encephalon."

These two morbid symptoms, viz,—convulsions and palsy—are rightly associated together by *Galen*. He had distinctly perceived that they were both often attributable to the same cause; or, at all events, that they were generally connected with some lesion of the same part of the animal economy. To shew the truth of this position, we have only to select any part of the nervous centres, whether of the spinal marrow, or of the encephalon; then act upon it by irritating or lacerating it; and we find that at first convulsions, and afterwards paralysis, is the result of such an injury.

The remarks of the old Classic, on the mode of distinguishing a lesion situated near the top of the spinal marrow from one of the encephalon itself—the face being scarcely, if at all, affected in the first instance, and almost invariably in the second—are quite in accordance with the experience of the best physicians of modern times. No doubt, exceptions can be stated to their absolute correctness, and the results of post-mortem examinations do not always tally with the rules here laid down; but may not the same be alleged of almost every position or axiom in the history of disease? If such a remark holds true in a great majority of cases, this is all the degree of certainty that we can expect in medical matters.

The simplicity, too, of *Galen's* language, in reference to the diseases we are at present alluding to, deserves some notice; he talks of the lesion, whether of the medulla or of the cerebrum, as an affection or suffering (πάθος,) which has its seat in one place (τοῦτον,) or another of the nervous system. Contrast such language with that of *Willis*, and other authors of his date, and you find them descanting upon spasmodic particles affecting the brain, either from some *vice* of the blood, or of the organ itself; on the explosion of the *animal spirits*; on the alterations of the *nervous juice*; on morbid *humours*, &c.

Having described the leading features of distinction between encephalic and spinal diseases, *Galen* advances in his inquiries, and seeks to discover the exact part that is affected. His several positions are taken up with no ordinary philosophical caution as well as skill, and worked out with the greatest ingenuity. Take, for example, the following short paragraph.

"A part being convulsed, there is necessarily a morbid affection either of its motor nerve, or of its muscular substance, provided no part of the nervous centres be diseased."

Here, then, we have most clearly and emphatically enounced one of those important truths in reference to the pathology of the nervous system, which it is the boast of modern science to have discovered. The expression, τὸ κινητικὸν νεῦρον (the motor nerve,) alone suffices to indicate what clear ideas *Galen* had on the subject. May we not fairly infer, from the expression just quoted, that in his opinion certain nerves were exclusively and essentially subservient to motion, and others to the function of sensation? This, it should be remembered too, was founded on, and derived from, mere pathological observation; and we need not now say how completely its accuracy has been established by the researches of *Bell* and others in the present century.

After designating the two kinds of paralysis, by the terms *anæthesia* (loss of feeling) and *akinesia* (loss of motion,) he candidly admits the difficulty of explaining the question as to their cause in the following paragraph :—

"Both Herophilus and Eudemus, who have been the first since the time of Hippocrates to describe with accuracy the anatomy of the nerves, have left a great problem still unsolved, when they could not explain how it happens that in certain cases of palsy the feeling only, and in other cases the power of movement is lost; while, in a third set of cases, there is an abolition of both faculties at the same time."

The important problem is here, it will be observed, most clearly and emphatically enounced; and one cannot fail to admire the candour with which the writer admits the difficulty of its solution, and his philosophic sagacity in avoiding any unsupported speculations on the subject.

In *Galen's* time, as in our own, there were men who wasted their lives in disputes and dissertations upon *words*, without ever searching after the pith and marrow of *things*. He is unusually intolerant of these gentlemen, and repeatedly urges them not to lose their time in such pursuits. One insisted upon restricting the term paralysis to loss of motion; another to loss of sensation; and so forth. What does he say?

"I request you to allow each one to make use of such denominations as he thinks best; but let us, without ceasing, have for our chief object to find out the part that is the seat of the disease, and the nature of the disease at the same time. As long as we have not positive knowledge on these subjects, in vain can we expect to treat with success the lesions either of motion or of sensation."

No medical precept can be better, or better put, than this—to search for the exact seat of the mischief first, and then to try and make out its real nature.

The case of the sophist *Pausanias*, related by *Galen*, although it seems to have been a very simple one, shows how judicious his therapeutic ideas were.

"*Pausanias*, who had recently made a voyage from Syria to Rome, began to experience a loss of feeling in the two last fingers, and on one side of the middle finger, of his left hand: under injudicious treatment, the insensibility of the affected parts became complete. I made inquiries into his condition, and learned, among other things, that during the voyage he had fallen from his chair and struck with force the upper part of his back; the contusion was soon cured, but a numbness of the fingers supervened. I immediately advised that the same remedies, which had been applied to the fingers, should be applied to the part that had been first injured, and my patient speedily recovered the entire use of the left hand."

We observe here the practice of a skilful physician; not to regard alone the part that is more prominently and immediately affected, but to seek for the producing cause, and to find out whether the local lesion may not be dependent upon an injury elsewhere.—*L'Experience.*

AN OCCASIONAL PHENOMENON IN PHLEBITIS.

In a recent number of the Annales de la Chirurgie, there is a sensible paper on what the French writers call Purulent infection of the constitution, by M. *Sedillot*, Professor of Military Surgery at Strasbourg. He admits, with M. *Tessier*, that all the phenomena of this formidable disease may be occasionally present, and yet that no decided traces of inflammation in any vein may be discoverable on dissection: but such an occurrence is, in his opinion, the exceptional, not the general, case. Phlebitis, therefore, is certainly not the invariable and only cause of the cachectic state to which we are alluding. But while he thus objects to the doctrine of M. *Blandin* when pushed to its full extent, he expresses his decided dissent from M. *Tessier's* views, that purulent infection is *never* pro-

duced by the direct admixture of purulent matter with the blood, and that it is always attributable to a peculiar alteration of the vital fluid, which gives rise to the formation of abscesses and purulent effusions in different parts, as one of its effects and symptoms.

As we have repeatedly of late adverted to this disputed point in pathology, and in one of our recent numbers gave large extracts from two very able letters addressed to each other by the chiefs on either side of the question, we shall not pursue the subject farther at present, but merely select the following extract from M *Sedillot's* paper on a peculiar phenomenon which has been observed in a few cases of phlebitic disease, and which is probably not well known to many of our readers.

"The venerable M *Ribes* shewed many years ago (vide his Memoires et Observations d'Anatomie, de Physiologie et de Chirurgie) that an inflamed vein, after having become indurated, painful, nodose, partially filled with pus, and impermeable for some extent to the blood, may recover its healthy condition under a process of resolution, so as again to admit the circulation to pass through its calibre. This remark of M. *Ribes* has subsequently been confirmed by several pathologists, and its accuracy cannot now be disputed. How are we to explain the phenomenon? Doubtless in some cases we may believe that an interstitial absorption of the purulent matter has taken place; but in others may we not suppose that the enveloping or surrounding membrane of the abscess within the vein may burst or ulcerate into the adjacent portion of its canal, which has remained permeable to the blood? Why should that which is of daily occurrence in common abscesses—viz. their opening on the side where the resistance is the least—be impossible in the case of venous abscesses? In what other manner too, shall we explain the presence of purulent matter not only in the veins surrounding many abscesses, but extending from these even to the vena cava and the heart itself, except in some such manner as I have hinted at?"—*Annales de la Chirurgie.*

THE CONNECTION BETWEEN ENLARGEMENT OF THE SPLEEN AND INTERMITTENT FEVERS.

M. *Piorry*, the "plessimetric" physician *par excellence*, and who takes everything appertaining to percussion under his especial patronage, has been lately edifying the Royal Academy with his lucubrations on the intimate connexion, as cause and effect, between enlargement of the spleen and intermittent fevers.

According to his view of the question, the primary action of marsh miasms is on this abdominal viscus, and the direct result of this action is the development of paroxysmal fever. The reader may presume, as a matter of course, that the state of the spleen is to be ascertained by plessimetric percussion.* The following is a selection of the very numerous deductions, (upwards of 60 in number), drawn by the author from his experience during the last fifteen years.

1. According to the results of 165 cases observed by me, paroxysmal fevers of different types do not essentially differ in their nature, the one from the other. They have mutually succeeded the one to the other, although the appreciable organic lesion remained the same in all. The greater or less rapidity, with which

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* We observe by the most recent numbers of some of the French Journals, that M. *Piorry*, having sufficiently dwelt on the pathology of the spleen, has been subsequently extending his plessimetric investigations to elucidating the diagnosis in various diseases of the kidneys. Probably each important organ of the body will have its turn.

the paroxysms return, does not materially influence the treatment required; the same means being found to succeed in fevers of dissimilar types.

2. In the present state of medical science, we cannot at all explain why a paroxysmal fever should assume one type rather than another—a tertian rather than a quartan, or a quotidian rather than a tertian.

3. Many authors have affirmed that quotidians are of much rarer occurrence than tertians or quartans. According to my experience, however, of 152 cases of intermittent fever observed in Paris, 98 were quotidians and only 54 of the other types.

(May not M. *Piorry* have on some occasions set down common ephemera fever as genuine intermittent? Genuine quotidian ague is surely not of common occurrence in Paris.)

4. From the analysis of 163 cases, it is incontestible that other causes, besides the influence of marsh miasms, may give rise to intermittent fevers. Falls or blows on the left side, inflammation and organic lesions of the spleen, &c. have been known to be followed by such fevers; the type, under such circumstances, being usually quotidian. Mere percussion of the splenic region will sometimes induce the *cutis anserina*, and a feverish tremor.

(Here the hobby-horse begins to make his appearance.)

5. Intermittents of various types are generated in Paris from the operation of marsh miasms. The effluvia from the Seine, the Bievre, and the canal, and even from the turning up of the soil for the construction of drains and so forth, are abundantly sufficient for the development of the malady.

6. The frequency of hypertrophy of the spleen in these fevers is so great, that it was found to be present in 154 out of 161 cases, in which the state of this viscus was attentively examined. In four of the remaining seven cases, it was painful on pressure; and as to the other three, M. *Piorry* observes that they were not seen by him, and it is probable that the finger, and not the plessimeter, was used in performing percussion.

7. In many cases, the splenic pain or uneasiness precedes the development of the fever, and seems indeed to be the 'point de depart' of it. It is highly probable that the pain is seated in the nervous plexus of the spleen, and is of a neuralgic nature. Paroxysmal fever not unfrequently succeeds to such neuralgias, and also to pains in the region of the left ovary. In other cases, the splenalgia is the consequence of a genuine splenitis, that may perhaps have been induced by external violence. Whatever may be the cause of the malady, there is always a very obvious relation between the suffering of the spleen and the paroxysmal fever. Organic alterations of this viscus give rise to such attacks; and these are liable to return as long as the lesion remains uncured. It is only when the spleen is destroyed by new morbid productions, that we find exceptions to the truth of this position.

8. Any disturbance or lesion of the gastro-enteric apparatus must be regarded as an accidental complication, and not as the cause, or as even a direct effect, of intermittent fevers.

9. We have no reason to believe that they (agues) are produced by any alteration in the state of the blood. The marsh-miasms seem to act directly upon the spleen—occasioning in the first place an hypertrophy of its substance and subsequently the paroxysmal fever—in consequence of some specific influence which we do not understand.

10. Diseases of the urinary passages sometimes give rise to febrile paroxysms, generally of a quotidian character. Many reasons lead me to believe that in such cases, as well as in certain instances of uterine and ovarian disease, a morbid impression is made on the splenic plexus of nerves. In chlorotic girls, in whom the spleen has become enlarged, and who suffer from intercostal neuralgia on the left side, such attacks are of frequent occurrence.

11. If we consider the intermittent and periodic character of neuralgia in

connexion with that of paroxysmal fevers—the manner in which both diseases yield to the sulphate of quinine—the frequent coincidence between certain neuralgiæ and paroxysmal fevers, &c., we shall be led to the conclusion that the 'point de depart' of these fevers is most probably in the nervous system, and especially in that part of it which is distributed to the spleen.

12. Intermittent fever may exist without any hypertrophy of the spleen being present; but then the paroxysms are not well marked. Such cases are rare; and even when they are met with, the attentive physician will generally detect, by means of delicate percussion, some morbid affection of this viscus.

13. Hypertrophy of the spleen may cause ascites and anasarca. The dropsy will quickly disappear, if the visceral disease be cured. A few *grammes* of quinine will often suffice to dissipate the splenic engorgement in the course of 24 hours (!) and the dropsical effusion in three or four days.

14. In a state of health, 50 centigrammes of quinine, whether received into the stomach or injected in an enema, will often cause a sensible diminution in the size of the spleen, (!) analogous to what takes place in hypertrophy of that organ.

15. From a multitude of observations, it appears that the sulphate of quinine, in the dose of from one to three *grammes*, has the effect of diminishing in the course of five minutes (dès la cinquieme minute!!) the size of the spleen; and also that the bisulphate, the acetate, and the citrate of quinine determine a sensible diminution in the course of one minute!!! (This certainly beats all medical marvels that we ever read of—in the 19th century too!)

16. In the treatment of paroxysmal fevers, and of hypertrophy of the spleen, the quantity of the preparations of quinine to be administered should be proportioned to the degree of the hypertrophy.

17. In certain erratic fevers, in which, although this is of very rare occurrence—there is no co-existent splenopathy, the quinine may be advantageously administered in small doses.

18. In the present state of medical knowledge, we may fairly assert that the quinine acts, in the cure of paroxysmal fevers, by rectifying the morbid state of the spleen. In persons free of such fevers, but in whom this viscus is enlarged, a sensible diminution of its size is effected by the use of the medicine. We may therefore infer that it exerts its salutary influence not directly on the fever, but on the splenic affection.

19. Quinine is of very decided utility in many cases of remittent and even of typhoid fever, but only in such as are accompanied with enlargement of the spleen.

M. *Piorry* sums up his long string of propositions by ascribing all their merit to the use of *plessimetric percussion;* and thus modestly hints at the greatness of the discovery which he has effected. "The art," says he, "of striking with tact a flat piece of ivory, accurately applied over the organs of the body, has thus enlightened a most important point of practical medicine, I mean the history and treatment of intermittent fevers. It has also served, and will continue to serve, to measure the therapeutic effects of many medicines—so true is it that we should not neglect the use of any means, and that we should ever bear in mind the memorable saying of one of our distinguished countrymen, when speaking of the thermometer:

"When we see such great results obtained from the simple aid of a little mercury enclosed in a glass tube, and when we remember that a small piece of steel, suspended on a pivot, led to the discovery of the New World, it ought surely to teach us that nothing which can enlarge and exalt the senses of man should be deemed of little moment; and this motive will plead my excuse for the multiplicity of details into which I have entered." (Biot, Traite de Physique.)—*L'Examinateur Medical.*

M. ANDRAL ON THE CARBONIC ACID EXHALED DURING RESPIRATION.

The conclusions, with which this accomplished *physiological*—not in the sense of the Broussaian School—physician sums up a long memoir which he recently read on the above subject, at the Royal Academy of Medicine, are the following:—

1. The quantity of carbonic acid exhaled from the lungs in a given space of time, varies with the age, the sex, and the constitution of the individual.

2. In the male, as in the female sex, the quantity is found to vary according to the age, independently of the bulk or weight of the person on whom the experiment is made.

3. At every period of life, between the eighth year and the most advanced age, a marked difference is observed in the quantity of the carbonic acid exhaled in the male, from what is found to be exhaled by the female. It is *cæteris paribus*, always much more considerable in the former than in the latter. This difference is especially remarkable between the 16th and 40th years of age—a period during which the male very generally exhales almost twice as much as the female.

4. In the male, the quantity exhaled goes on steadily increasing from eight to thirty years of age. This increase is greatest at the period of puberty. After the 30th year the proportion exhaled begins to decrease; the amount of decrease becoming more and more considerable in advanced age, so that in the latest period of life, it is nearly about the same as it was in early youth.

5. In the female, the exhalation increases according to the same law as in the male, during the period of childhood. But at the time of puberty, when the menstrual function begins to be developed, the increase—contrary to what occurs in the other sex—is suddenly arrested, and remains stationary (at nearly what it was in infancy) as long as this function continues in its integrity. When it begins to cease, the exhalation of carbonic acid from the lungs increases in a very remarkable degree. As the woman, however, advances to old age, it again decreases, and ultimately becomes, as in the male sex, very small.

6. During the whole period of pregnancy, the exhalation is for the time increased to what it is usually in women "parvenues a l'epoque de retour."

7. In both sexes, and at all periods of life, the amount of the exhalation is proportionally greater in persons of a robust constitution and of a muscular frame. Whenever the energies of the system are reduced from disease or otherwise, the quantity of carbonic acid exhaled from the lungs is found to be diminished.

In conclusion, M. *Andral* remarked that the variations described above do not depend, as one might *à priori* imagine, on differences in the mere capacity of the thorax; although, as a matter of course, thay are a good deal influenced by this cause.—*Encyclographie des Sciences Medicales.*

CASE OF GINGIVAL DIPTHERITE, WITH REMARKS.

A woman, 40 years of age, and apparently of a healthy constitution, began to experience, without any appreciable cause, a painful and puffy state of the gums. On examining them, they were found to be red and much swollen. At the point of their junction with the teeth, they were covered with a grayish-coloured dirty-looking crust or slime, from beneath which blood oozed out on the slightest pressure of the parts. The breath was very offensive; the submaxillary glands were somewhat swollen; and there was a little feverish *malaise* of the system. This is the disease which M. *Bretonneau* first called "gingival diptherite," and which some of the old authors have described under the names of "scorbutic

gangrene of the gums," and "aquatic chancre." We may here remark that it is quite a mistake—which, by-the-bye, still prevails among some medical men—to imagine that the malady has anything to do with genuine scurvy. Indeed, on many occasions, it appears to attack the robust and healthy rather than the feeble; and, moreover, it is seldom or never associated with hæmorrhage from other parts of the body.

If the dirty-looking crust be removed from any part, the mucous membrane underneath will be found eroded, or even ulcerated, and the gums red and seemingly inflamed; but not of a purplish colour, as in scurvy. If muriatic acid or alum be applied, this covering or crust becomes detached; but it is quickly re-secreted.

The disease may continue stationary in this simple state for weeks, or even months; but in many cases it spreads to the internal surface of the cheeks, which then becomes the seat of the fibrinous (*couenneuse*) secretion, and this adds much to the fœtor of the breath.

The *diptheritic* inflammation may even extend back to the uvula and tonsils. When this takes place, symptoms of malignant cynanche make their appearance; and if the disease be not speedily arrested, the larynx itself becomes affected, and the patient will inevitably die. It is therefore of great importance to form at first a correct diagnosis of the disease; and here we must not omit to mention a curious circumstance which may not be known to many medical men. True diptheritic inflammation rarely extends from the gums to the larynx; but it is by no means unfrequent that the laryngeal disease is caught by the attendants who wait upon the patients labouring under the gingival affection.

M. *Bretonneau*, many years ago, directed the attention of the profession to the circumstance that, during the prevalence of epidemic cynanche maligna, many persons were affected with 'couenneuse' inflammation of the surface. The truth of this observation I had many opportunities of observing during the great epidemic of diptherite which prevailed in many districts of France in 1828. The surface of wounds and ulcers was apt to become covered with a fibrinous exsudation or coating, which in many instances continued unchanged for weeks and even months. At the same time, croup was very prevalent among children, and gingival diptherite was not unfrequent in adults.

Those who have read the work of M. *Bretonneau*, will remember that the epidemic of croup, which committed such ravages in Tours, was supposed to have been conveyed thither by a troop of soldiers who were found on their arrival to be affected with gingival diptherite.

In confirmation of the views now mentioned, M. *Trousseau* (the writer of the preceding remarks) informs us that, when his patient was admitted into the ward, he expressed his fears that her infant would become affected with croup—although it was perfectly well at the time. The prediction proved unfortunately to be too true; for the child soon after died from the affection of the larynx.

The treatment of gingival diptherite is sufficiently simple. The affected parts should be touched every morning with strong muriatic acid; afterwards once every second morning will be often enough. During the day, a mixture of borax and honey should be frequently used as a gargle.—*Gazette des Hôpitaux.*

DANGER OF EXCESSIVE DEPLETION IN PERICARDITIS.

On the occasion of a case of membranous pericarditus, accompanied with effusion, which was recently treated in the medical wards of the Hôtel Dieu, M. *Tessier* the physician made the following practical remarks.

This phlegmasia of the pericardium is to be regarded rather as one of the forms of rheumatism than as a mere localisation of this disease. When the in-

flammation is attended with an effusion of membranous lymph on the surface of the heart, the prognosis must always be considered unfavourable. The case then very frequently terminates in a fatal manner, either rapidly or by a more slow and chronic process. When a fatal termination is likely to take place, there is very generally a sharp pungent pain felt in the cardiac region; and this is usually accompanied with great embarrassment in the movements of the heart, with syncope, breathlessness, and sense of impending dissolution. These symptoms become more and more alarming, as the amount of the serous effusion within the bag of the pericardium increases.

The treatment of such complaints is often most perplexing; as the practitioner is apt, in particulur cases and at a certain stage of the disease, to attribute some of the symptoms to an aggravation of the inflammatory mischief, when in truth they are owing to an anemic state of the constitution (induced by the evacuations that have been rendered necessary), and when therefore they require not the continuance of depletory, but the administration of strengthening *remedies*. I remember well a case in which my experienced colleague, M. *Recamier*, diagnosticated (the word, though most cacophonous, is expressive) such a condition of the system in a patient who exhibited all the symptoms of genuine pericarditis. The pulse was 180; but the pulsations were rather mere vibratory movements than distinct appreciable beats. (Surely with such a state of pulse, no evacuations, far less the direct loss of blood, can ever be proper.—*Rev.*) The medical men in attendance wrongly supposed, from the great frequency of the pulse, that the use of antiphlogistic measures was still required. The patient indeed always seemed to be relieved for a time by the abstraction of blood; but ere long the symptoms returned, and with aggravated severity.

M. *Recamier* being called into consultation at this period of the case, and finding on auscultation that both sounds of the heart were very *clear*—a useful diagnostic symptom—concluded that the symptoms were the result not of any *recrudescence* of the inflammation, but of the actual want of blood of the vessels, or of a veritable anemia. He advised the immediate discontinuance of all evacuating, and the use of strengthening medicines; from that time the patient began to recover.

M. *Tessier* alludes to a similar case which recently occurred in his own practice, and which he saw along with another physician. All the symptoms of pericarditis with effusion were present; the pulse was very rapid and extremely irregular. The use of antiphlogistic remedies had removed the pain and all the active symptoms; but still the distressing cause of anxiety and the unnatural state of the circulation continued. The sounds of the heart on auscultation were unusually sharp and *clear*. After the cautious administration of wine, the rapidity of the pulse subsided, and the inward distress became less and less; sinapisms were applied over the region of the heart. The patient did well.—*Gazette des Hôpitaux.*

Remarks.—Nothing to our minds is a more convincing proof of the very *un*practical character of the French school, than the not unfrequent announcement of old-established and well-recognized (at least in this country) medical truths, as if they were discoveries of the present day. And although M. *Tessier*, in the preceding remarks, may not lay claim to any originality as to the precepts which he lays down for the management of certain cases of pericarditis, the whole turn of his lecture evidently gives the impression to the reader that the value of these very precepts is, in some degree, novel to himself. Most of the French physicians have for so many years allowed themselves to be so thoroughly imbued with the exclusive doctrines of the Broussaian school, that they have scarcely been able to see more than one, and the same, morbid element at work in whatever diseases came under their inspection. From the plague and the Asiatic cholera to a simple 'embarras gastrique,' or an old man's winter cough, all

alike have been regarded as only modifications or degrees of an inflammatory affection; and, consequently, almost every case has been subjected to one method of treatment.

Had such a doctrine prevailed on this, instead of the other, side of the Channel, it might have given rise to less surprise, seeing that the diseases of the English people are on the whole of a more inflammatory character and will stand the use of depletion better than those of their more abstemious and thin-diet neighbours. But fortunately for John Bull, his doctors are not very much addicted to theorising, and are usually in the habit rather of looking at things as they present themselves before their eyes, than of speculating about their cause and origin, or determining beforehand in what manner they are to be treated. Not so with the French physicians generally; they are taught in the schools to regard diseases as certain uniform entities, which exhibit the same, or at least similar, characters in all individuals and at all times, and which may therefore be arranged with almost as great precision and certainty as plants are in a botanical, or animals in a zoological catalogue—a great and a very pernicious mistake.

But not to be led into any vague generalities, let us revert for a moment to the subject of excessive or over-prolonged depletion in the treatment of inflammatory diseases.

Whenever the pulse becomes exceedingly hurried, irregular and compressible, the physician may rest assured that the period for ceasing further evacuations has arrived, and that the use of mild tonics, and perhaps of sedatives also, is now required. The mere existence of pain, or of difficulty of breathing, or of cough, or of sickness, or of delirium, or, indeed, of any one symptom, is not to be regarded, *per se*, as a sufficient indication for the use or continuance of antiphlogistic means; for we well know that each and all of them may depend upon an *anæmic*, as well as upon a *plethoric*, state of the system. A dose of opium, given at the right moment under such circumstances, will often act as a charm by sending Nature asleep, and thus lulling, for a time, the irritable state of the nervous and circulatory systems. If this advantage be followed up by a judicious use of tonics and mild food, many a case will be quickly conducted to a favourable termination; whereas, under a different management, weeks and months would have been fruitlessly spent in endeavouring to restore the patient.—*Rev.*

M. RECAMIER ON CRITICAL DAYS IN DISEASE.

The following remarks of this truly eminent and most practical physician deserve notice, from their savouring not a little of the doctrines of the last century. Is it that, in medical as in theological matters, there is a tendency in the present day to recur to ancient usages and opinions?

"The proper period for interfering in diseases cannot be determined beforehand, or by any fixed and uniform rules. This moment varies in different cases of the same disease, in consequence of a variety of circumstances arising from peculiarities either of constitution, age, sex, and so forth. Do we find, that all young people arrive at puberty at the same age? or is the process of digestion completed within the same period in all persons alike? Certainly not; one person digests, in the course of two hours, food which may require four or even six hours in another person. And so it is with diseases; they are subjected to a sort of digestion, the duration of which is found to vary not a little in different constitutions. The *coction*—in other words, the crisis, whether this occurs, by perspiration, by the urine, by suppuration, or in any other way—is usually effected in a certain number of days: this we may calculate upon in many cases to a certain degree; but the period may be influenced by many unforeseen cir-

consequence. The physician cannot be responsible for accidents: these may be regarded as enemies occurring unexpectedly in the course of a disease, and no hope will wisely trample the results that might previously be considered highly promising.

"But it is not so much upon the number of days that may have elapsed since the beginning of a disease—although this consideration is often of the highest importance—as on the actual state of a patient when we first visit him, that our prognosis in the first case, and the therapeutic indications in the next, are to be based. I have met pneumonic patients on the fifteenth and eighteenth days after the attack, when I have found the pulse remaining hard and powerful, there were no symptoms of suppurative action having already commenced.

"It is, therefore, the actual state, rather than the length or duration, of a disease that we are to attend to. This latter circumstance, indeed, is not to be neglected in our calculations; but it must not be trusted to as a guide, since the crisis or the degeneration of a disease may not occur on the day that we expect it to take place.

"You may have heard that much stress has been laid by some writers on the ninth day, as the most frequent period at which the crisis of pneumonia is apt to take place. What I have just now said, as to the necessity of subordinating the consideration of days to that of the acuity or coction of the disease, and to the particular indications deducible from the state of the pulse or the general strength of the patient, must not make you overlook the real value of days, especially in reference to the occurrence of crises, and to the formation of our prognosis. For example, any disease which has lasted longer than one day, will, in all probability, continue for half a week at least; and if it exceeds this period, it will certainly reach the beginning of another week. If the crisis occurs on the seventh day, we may be certain that it will not pass beyond the ninth; but if it does, we may then count upon it continuing for three weeks. As to the seventh day, there is, in general, very little to be done; the crisis may occur on the following two days; if it has not commenced on the seventh, it may take place on the ninth; and if not on the ninth, we must wait till the 11th. When it exceeds this period, it becomes very difficult to say when it will occur; the disease may be prolonged to the 21st, the 28th, or the 30th day. I have occasionally seen it deferred till even the 49th day.

"We must never allow the consideration of particular days to influence our treatment of pneumonia; as long as there is much excitement present, and the pulse remains hard and full, blood must be drawn; but, whenever it becomes soft and compressible, we should cease to bleed.

"The following case will show well how necessary it is to be guided by symptoms as they arise, in the treatment to be pursued. A man was admitted into the hospital with the usual symptoms of jaundice; his pulse was soft, and there was but little or no febrile re-action. Laxatives and emollient remedies were tried for several days; but still there was no appearance of resolution. It was now found that the region of the liver was slightly painful, when pressed on: a few leeches were therefore applied over the tender spot. Almost immediately afterwards, there was a marked aggravation of the febrile symptoms, and much more re-action on the system. The patient was now bled from the arm; there was no relief;—the bleeding was therefore repeated; but still without removing the tenderness—and as the blood drawn was always buffy, and the pulse had risen in force after every depletion, the venesection required to be repeated other six times before the inflammatory symptoms freely yielded. After the eighth bleeding, a crisis by perspiration and copious purgation ensued, and the patient was speedily relieved from all his sufferings.

"I cite this instance," says M. *Recamier*, "to show how necessary it is to watch the state of the pulse in all cases, as strongly marked inflammatory symptoms may unexpectedly occur in the course of a disease, which in its first stage was

attended with symptoms of debility and want of power. It affords a very instructive illustration of the difference between mere *oppression*, and a real *abolition* or loss, of vital force."—*Gazette des Hôpitaux.*

PNEUMONIA ACCOMPANIED WITH DELIRIUM: USE OF ANTISPASMODICS: REMARKS.

A man was admitted into the physician's wards at the Hôtel Dieu with the ordinary symptoms of pneumonia, when passing from the first to the second stage (crepitant râle throughout the entire extent of the lung.) Next day the respiratory *bruit* was much more obscure: and on the following day it could scarcely be heard at all. From this period, a distinct blowing sound was perceptible under the axilla; the sputa exhibited the appearances usually observed in pneumonia. The patient was immediately bled very freely, and also cupped. In the evening he became delirious; but there was scarcely any febrile excitement of the system: the delirium continued throughout the night. The patient was ordered repeated doses of syrup of poppies, and also a grain of musk in the form of pill twice a day. For the first day or two there was no decided amendment; but the dose of the medicines being then increased, the delirium began to subside, and by the eighth day it had entirely ceased; and with it the pneumonia at the same time. It was very curious, throughout the progress of this case, to observe the subsidence of the thoracic, simultaneously with that of the cephalic affection.

The following remarks were made by M. *Tessier* on this subject:

"Every one knows full well that when pneumonia is accompanied with delirium, the prognosis is necessarily very unfavourable, if the latter symptom be not quickly subdued: the complication is usually the more serious when the delirium is unattended with fever. On the other hand, it is remarkable that the pneumonia usually yields with great readiness, when the head disorder gives way to the remedies employed. The latter is, therefore, under such circumstances, to be regarded as the more important indication of the two, in respect of the treatment to be adopted; experience having clearly shewn on very numerous occasions, that by removing the delirium, the pneumonia will subside of itself; whereas, if the delirium continues or does not yield to the remedies used, the inflammation will inevitably prove fatal."

In allusion to another case of pneumonia in the hospital, in which there was exceedingly little re-action in the system, and which yielded to blistering and the use of the Kermes mineral internally, without recourse being had to venæsection, M. *Tessier* very properly insisted on the necessity of being guided by existing symptoms in all cases of ambiguity, and of not being led away by any pre-conceived notions as to the intrinsic nature of the disease.

"Inflammation of the lungs is not to be treated in all cases alike by the same means; and those who attempt to establish a particular method of treatment by appealing to statistical tables of cases and so forth, commit a very egregious error. To talk, therefore, of what should be done at the commencement, and what at the middle, and what in the advanced stage, of a disease, without having regard to the existing symptoms, manifestly argues a sad want of practical knowledge. We must be guided in our treatment by the symptoms present, and not by the circumstance of the disease having existed this number, or that number, of days. Whether it is the fourth, or the sixth, or the tenth day, of the attack, on which we bleed, it matters nothing—provided the symptoms require that depletion should be practised: it is not a question of time; it is a question of indication. If, for example, in the present case, I had paid regard to the statis-

tical precept that bleeding is always much more useful at the commencement than in the more advanced stage of pneumonia, I should have committed a very grave mistake; for here there was no indication to bleed at any time; the pulse was weak and compressible, and the patient was in such a state that in all probability a loss of blood would have brought on syncope and general prostration, that might have terminated fatally."—*Ibid.*

On Animalculæ in the Blood.

The occasional existence of worms in the blood of a living animal is a phenomenon that must excite the curiosity of every one. The allusions to such an occurrence in the writings of the old physicians are so imperfect and confused, that it is difficult to determine what amount of credit we can attach to them. If the observations of Welsch* and Polisius† on worms found within the heart of the human subject are not to be received as authentic, these authors having probably mistaken fibrinous concretions of the blood for actual worms, recent researches however have clearly shown that such entozoa do really sometimes exist in the hearts of some of the lower animals. M. Barkow‡ found in the right ventricle of a species of heron (*Ardea Cinerea*) two nematoids which are now preserved in the museum at Greifswald; and M. Baer§ has discovered a peculiar species of the distoma (*d. duplicatum*) in the hearts of several Molluscous animals.

It is well known that a particular kind of worm (*Strongylus armatus minor*) is occasionally developed in the fibrinous concretions that form in aneurismatic arteries of Solipedous animals. The veins too of certain animals are not exempt from these entozoa. Treutler‖ found a species of *fasciola* in the pulmonary veins of a seal: and another kind of worm in the vena cava of a deer. Numerous authors have subsequently studied the particular species of *Strongyli*, that are occasionally met with in the venous sinuses at the base of the cranium and also in the pulmonary veins of the *Delphinus Phocæna*. Schmitz, while observing the circulation in the mesentery of a frog, happened to observe the appearance of living animalcules existing in the blood. To ascertain if this was of frequent occurrence, he examined the blood of 53 lizards, and of 81 frogs; but without success. At length, however, in a frog, he again discovered in the blood animalcules similar to those which he had seen in the first instance. He observed that they made their way through the parietes of the vessels, and then burst and discharged the granular matter which their bodies appeared to contain—a phenomenon that has been repeatedly witnessed in certain *Polygastric* animalcules, &c. It is the opinion of M. Valentin that these blood entozoa, described by Schmitz, most nearly resemble the *Polystoma venarum* of which Treutler has given so minute an account.

M. Valentin himself has repeatedly found in the blood-vessels of frogs the *Anguilula intestinalis*. His idea is, that these animalcules are hurried along in the torrent of the circulation, till they, as it were instinctively, stop in some organ that is best suited as a domicile for them; and that they then work their way through the parietes of the vessels. This author also mentions that a *Strongylus armatus* was recently discovered in the blood from the venæ cavæ of a horse; there was no trace of an opening in the walls of the vessel, or of any communication between it and the intestinal canal.

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* Disput. de Verme Cordis. Lips. 1694.
† Observ. de verm: in corde repert: (Ephem. Nat Cur.)
‡ Observations de Entozois. 1825.
§ Novæ Obs. de Entozois. 1829.
‖ Observ. Anatomicæ-Pathol: de Helminthologiâ. 1793.

Dr. Vogt, while examining with a microscope the membrana nictitans of a frog, was surprised to find that the vessels, still filled with blood, contained numerous living animalcules, which moved about with great vivacity: similar animalcules were observed in the blood-vessels of other parts of the body. On inspecting the abdominal cavity of the animal, he observed several brown-coloured saccules, similar to those in which M. Valentin has occasionally met with *filariæ*. As he believed that these minute worms are the embryos of entozoa, he examined these saccules with great attention; but they were all quite empty.

In other frogs, however, in which these abdominal saccules existed, he found that many of them contained a *filaria*—the resemblance between which and the animalcules of the blood is very marked.

Valentin has recently described, in a letter addressed to Müller, some very curious phenomena, which he observed in the blood taken from the abdominal aorta of a trout. On first examining it, he noticed a number of dark-coloured globules mixed with the globules of the blood; they were in rapid movement, without however changing their place. After the lapse of a short time, I was surprised, says he, to perceive first on the side of these globules a sort of transparent appendage or tail; and subsequently that there was evolved an animalcule of an elongated shape, and which was continually in rapid motion round its own axis. The animalcule belongs probably to the old genus *Proteus*, or what Ehrenberg has called *Amæba*. Its length did not exceed from a 3 to a 5,000th part of an inch. Sometimes as many as ten and even more could be counted in a single drop of the blood; but in no other part of the body could they be discovered. The only other entozoa that were found were several ascarides in the pyloric appendages.

M. Gluge of Brussels has subsequently communicated to Müller's Archives a description of an animalcule, which seems to be very similar to those mentioned in the preceding notice, and which he accidentally met with in the blood of a frog.

It seems, therefore, that the existence of entozoa in the blood of certain animals is by no means of very rare occurrence. As yet we know nothing of the manner in which they become developed; but further investigation of the subject may throw light on this very curious subject.—*Archives de Medicine Comparée*,* No. 1. October, 1842.

NOTE ON EMPHYSEMA OF THE LUNGS—CASE OF THE LATE MR. HORNER—GREAT SAGACITY OF DR. BAILLIE.

A few pages back we have given a brief account of a discussion at the French Royal Academy of Medicine on the subject of Pulmonary Emphysema. Since writing that article, we have been reading the recently published memoirs of that distinguished statesman and most amiable man, the late *Francis Horner*, M.P.; and his case seems to us to be altogether so very interesting in a medical point of view, and so well calculated to throw some light—as far as a single example can do—on the history of the disease in question, that we do not hesitate to give the details at some length, as recorded in the work alluded to. Our readers will observe that, in many respects, it bears out the opinions expressed by M. *Louis*

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* (This is the first number of a new Journal recently started in Paris under the immediate management of M. *Rayer*. It promises to be of great interest; the study of comparative pathology has hitherto been far too much neglected.—*Rev.*)

and M. *Bouillaud*, &c. on the frequent co-existence of Cardiac affection with emphysema of the lungs.

Mr. *Horner* seems never to have been a very robust man; his constitution or temperament was of the bilious-phlegmatic kind; and for many years he had been subject to stomach complaints. In 1816, the year preceding his death, he began to exhibit symptoms of pulmonary disease, the nature of which could not be very easily made out. In the summer of that year we find him writing thus to his father: "I am still a little plagued with a cough, in which there is nothing at all material, except the circumstance of its continuing so long, which I think is owing to the cold weather. To be sure of this, I have seen Dr. *Warren*, who thinks there is nothing in it; but considers the stomach, as of old, chiefly in fault, and has given me some directions to observe on that head." We gather from a subsequent letter that, along with cough, difficulty of breathing, amounting often to breathlessness, and palpitations of the heart, there was extreme muscular debility; for we find him at one time alluding to a "feeling of mental lassitude that seemed to wither me within," which he had experienced at Edinburgh in the course of the autumn.

The opinion of his physicians both in that city and also in London was, that his complaint was some affection of the lungs, neither phthisical, nor yet dropsical; but they felt considerable embarrassment in determining its real nature. The advice of all was, that the winter should be passed in a warm climate, and that all active exercise, including much talking, should be avoided: "No vociferation, sir, even if you are paid for it," was the injunction of Dr. *Gregory*. He went to Pisa; but the change does not seem to have produced any very decided benefit, for we find a friend writing to him in the first week of January, thus: "As your breathlessness seemed not to be at all relieved either by the change of climate, or by the treatment recommended to you by *Baillie* and *Warren*, I made out a statement of your case at present, as well as I could collect the particulars from your own letters and your brother's, and sent copies of it yesterday to both these physicians, with a request that they would take it into their consideration, and give me their opinion .... *Baillie* thinks it (your illness) may proceed from a consolidation of part of the substance of the lungs, in consequence of which there is less space for air, or it may arise from a change of structure in the air-cells, by which they are become larger, and in the same proportion afford a smaller surface for the oxygenation of the blood. In either of the last suppositions there is no danger from the complaint, though there may be much inconvenience. They recommend to you to resume the use of the mercurial pill, and to try the effect of the supercarbonate of potash."

While at Pisa, Mr. *Horner* put himself under the care of Dr. *Vacca Berlinghieri*, who seems also to have been much puzzled about the case. Opium, in doses of a grain at bed time, (and this was occasionally repeated in the morning,) was found to procure great relief to the dyspnœa: "The relief," he writes himself, "seems to me quite marvellous, and I could fall down and worship my pill like a Turk; what is very new to me indeed, I have got through the labours of my toilet, not only without pain and palpitations, but with scarcely any feeling of exertion; and I am altogether a stronger and a better man than I have been a great while." From the very decided relief which the use of the opium seems to have invariably given, Dr. *Vacca* thought it reasonable to believe that the chest symptoms were, in part at least, owing to an affection of the nerves of the lungs.

As usual with most patients labouring under thoracic complaints, Mr. *Horner* appears never to have entertained any apprehensions himself about the result of his malady: there is usually an innate hopefulness not only in phthisis but in most pulmonary complaints that is truly surprising. The fatal change at last seems to have been very sudden and unexpected; the dyspnœa and cough became worse, and there were strong palpitations of the heart, with a low, irregular, and

intermittent pulse, and general prostration. His brother had left him for a few minutes, and on returning to his bed-side found his face deadly pale, his eyes fixed, and his hands cold: it was thought at first that he had merely fainted; but it was soon found that life was extinct.

The following report of the appearances found on dissection was drawn up by *Vacca*.

Sectio Cadaveris.—The body was not much emaciated. All the abdominal viscera were perfectly sound; only the venous system was unusually gorged with blood. On opening the thorax the lungs were observed to be singularly shrunk, especially the right one. Their colour was livid, and their surface was very uneven: this unevenness was produced by a great number of transparent vesicles, varying in size from that of a pea to that of an almond. By far the greater number of these vesicles were on the anterior face of the lungs; few on the posterior. On compressing them they disappeared, and the air, with which they were filled, passed into the bronchi: they re-appeared on blowing air into the trachea. These vesicles did not communicate with the cellular tissue, which unites the air-cells together, so that the case must be regarded not as one of emphysema, but of an abnormal dilatation of the air-cells. A great portion of the substance of the lungs, especially at their posterior part, was condensed, indurated, and in many places completely hepatised. The different lobes did not adhere together; neither was there any adhesion between the pulmonic and the costal pleuræ. The lymphatic glands of the bronchi were larger than usual; and the membrane of the air tubes was slightly engorged.

The pericardium was sound; it contained a small quantity of serosity. The heart was extremely soft and flaccid, so that it was readily torn with the fingers. Its right auricle was much dilated, and filled with blood. The walls of the corresponding ventricle were much attenuated; it was in them that the flaccidity of the muscular substance was most conspicuous. Within its cavity was a firm, fibrous, and whitish-coloured coagulum, which adhered very strongly to the *columnæ carneæ*. This coagulum had been most probably formed during the last moments of life. The right cavities of the heart did not exhibit anything unusual.

Baillie, in his Morbid Anatomy, and *Lieutaud*, in his Historia Anatomico-Medica, have related several cases of morbid change which have some resemblance with the present one; but I do not observe that either of these authors had ever found shrinking of the substance of the lungs, dilatation of part of the air-cells, hepatisation of a large portion of the pulmonic parenchyma, and an affection of the heart, in the same individual.

DOCTEUR VACCA BERLINGHIERI.

Pisa, 12th Fevrier, 1817.

The following note from the late Dr. *Warren* (for many years one of the leading physicians in this Metropolis), in reference to the preceding report, will be also read with interest.

"I have shown *Vacca's* account to Dr. *Baillie*, who considers the case as exhibiting a very unusual form of disease, and one which is evidently out of the reach of medicine. The state of the heart presented no unusual appearances; the flaccidity and tender structure of its fibres being met with very frequently in individuals whose constitutional powers have failed by slow decay: the appearance within the right ventricle was a coagulum of blood not uncommonly found in that situation after death. The condensation of the lungs is also not unfrequently met with, and justifies the opinion which Dr. *Baillie* held to you of such an alteration of structure being the probable cause of Mr. Horner's difficulty of breathing—which was never attributed to water in the chest, but to an obstruction in the circulation of the blood through the lungs, arising from some cause not easily distinguishable. The enlargement of the air-cells to the extent mentioned by Dr. *Vacca* is a disorder so rare, that there are only three instances to

be found in the anatomical collections with which Dr. *Baillie* is acquainted. The immediate cause of death appears to have been owing to the increase of the obstruction of the lungs to such an extent, as to have prevented the free passage of the blood through the branches of the pulmonary artery, by which the right side of the heart became gradually gorged with blood, and its action was slowly suspended.

PELHAM WARREN."

Remarks.—This case is altogether an exceedingly interesting one, and forms a good theme for a little practical discussion. What was the primary complaint,—the 'fons et origo,' of the long continued suffering, and finally of death? It was said at the time, and this too by men of the highest professional authority, that it was Emphysema or morbid dilatation of the air-cells with partial solidification of the substance of the lungs, and it was regarded, as we have seen from the preceding report, as an instance of an extremely rare form of disease. But it may be very fairly asked, was the pulmonary complaint the primary, or was it not rather the secondary, affection? Was it not the result of the dilated atonic condition of the heart? We think it was; and that the case of Mr. *Horner* was in fact one rather of cardiac, than of pulmonic, disease. From the want of energy in the ventricles, more especially in the right one, they were unable to propel with ease the stream of blood that was continually pouring in. The necessary consequence of this was, that the circulation through the lungs was more and more embarrassed, until a complete congestion took place in certain parts, and the pulmonary parenchyma thus became impervious to the air. The remaining portion of the lungs had to compensate for the deficiency, and had therefore extra duty to perform: hence the dilatation of the air-cells, and hence the dyspnœa and also the distress in the action of the heart. The history of the case seems to confirm this view of its pathology; the symptoms were always much aggravated by bodily exertion, and they were remarkably relieved by the use of opium—which no doubt tranquillized the movements of the heart for a time, and thus enabled it to discharge its contents more completely and more regularly.

Does change of climate hold out any prospect of benefit in such cases?—we think not. Rest and quietude in a pure atmosphere, passive exercise in a carriage when the weather is fine, great attention to the stomach and bowels, the use of mild tonics and antispasmodics, perhaps smoking, and certainly cheerful occupation of the mind—these are our chief remedies in such a case. To these we might be inclined to add, in most instances, a seton over the region of the heart. The grand thing is to form a correct diagnosis; the proper treatment follows almost as a matter of course.—*Rev.*

MISCELLANEOUS NOTICES.

1. *Acupuncture in Neuralgia.*

M. *Lallemand* of Montpellier has for many years been in the habit of using acupuncture in cases of *genuine* neuralgia with very decided benefit; against rheumatic pains, he says, it is quite inefficacious. We must therefore be careful to discriminate the cases for its employment; otherwise we shall certainly be disappointed. If the pain be limited to the *trajet* of the nerves, we may with tolerable confidence promise relief, if not a complete cure, of the suffering. M. *Lallemand* relates many cases: one we shall briefly notice. A man had for six months been afflicted with most severe pain along the whole course of the sciatic nerve; five needles were inserted along its tract, and left in for three hours. The application was repeated, at intervals of one or two days, four successive times; and the man was then completely cured.

2. *Importance of Veterinary Medicine.*

At the recent annual meeting at Strasbourg of the Scientific Association of France, M. *Falk* read a very sensible paper with the view of shewing the importance of medical men making themselves acquainted with Veterinary medicine. The utter neglect of this study is certainly to be regretted, as some valuable hints for the treatment of diseases in the human subject might be derived from what may be called Comparative Pathology. Every one in the present day recognises the importance of a knowledge of the anatomy of the lower animals;—why not then of their diseases also?

The suggestion of M. *Falk* was well received by the Association.

3. *French Gratitude to Medical Men.*

We observe by one of the Paris Journals that the names of *Percy*, *Desgenettes*, and *Larrey* have been recently engraved on the famous Arc de Triomphe, at the Barriere de l'Etoile.

In some respects certainly, medical men occupy a higher position in society in France than in this country. For example, who ever heard of a doctor becoming a *Baron*, or peer of the realm with us? and yet every one knows that *Portal*, *Dupuytren*, and *Cuvier* occupied that dignified rank in the parliament of France; and where is the nobleman of Germany that might not be proud to be associated with a Baron *Humboldt*? True, the circumstance of a French peerage being merely personal, and not hereditary, makes a very material difference in the case; but then, why should there not be a certain number at least—we are no friends to an elective aristocracy, as a general question—of the most eminent men in the various departments of science being admitted to the highest honours of the state, without necessarily entailing upon their families the expensive title which they bore themselves?

By a recent Royal Ordonnance, M. *Louis* has been made an officer of the Legion of Honour, and M. *Leuret* a chevalier of the same Order.

Again, MM. *Andral* and *Rayer*—certainly two of the most distinguished names in French medicine of the present age—have been elected members of the Institute. "The selection of such men," says one of the Paris Journals, "shews very emphatically that this illustrious body looks as much to the scientific character as to the practical eminence of its candidates; in a word, that it wants not so much the mere skilful physician as the enlightened philosopher in its ranks."

4. *Treatment of Gonorrhœa.*

"There are two opposite methods of treatment," says M. *Vidal* (de Cassis,) "which I deem equally injurious; that which precipitates the issue (qui brusque le denouement) of the case, on the one hand, and that which awaits it with an almost complete inaction on the other. Both of these methods are apt to favour the extension, the displacement, or the chronicity of the disease. It is certainly remarkable that, in almost all the cases of nephritis supervening upon gonorrhœa which have occurred in my experience, the patients have taken the *potion of Chopart*, or some other resinous stimulating diuretic, more or less freely, from the commencement of the attack. Inflammation of the neck of the bladder is not unfrequent after such treatment. The same result is apt to occur when little or nothing is done to check the urethral discharge. The proper line of treatment, therefore, seems to be neither to try to stop the discharge suddenly, nor allow it to take its own course, and leave it to Nature's efforts to remove." (This remark is perfectly just; much mischief might be avoided by acting on M. Vidal's precept.)

5. *Anecdote of Decandolle.*

One day *La Place* being with M. *Cretet*, then minister of the interior, expressed

his regret to see *Decandolle*, the ornament of French Botany, sent as professor to Montpelier, as it was the intention of the Institute to have appointed him one of their members. "Your Institute! your Institute!" exclaimed the minister; "I often wish that I could send a cannon-ball among you, and scatter the members over the whole of France. Is it not a lamentable thing to see all the light concentrated in Paris, and the Provinces in utter ignorance!"

6. *Poverty of Medical Men: how to eke out a livelihood.*

"One of the most certain signs, (says a writer in the French Medical Gazette,) of the 'decadence' of a profession, is the necessity which many of its members experience, to seek for supplementary resources. Medicine is a most noble profession, but in the present day it is certainly one of the worst trades (industries) going. It is all very well to talk of dignity and high feelings; let it be remembered that a doctor has a stomach as well as a heart to attend to. In Paris alone, there are not fewer than 2000 medical men, and it may be readily supposed that a great number of them scarcely ever get a fee. How then are they to live until practice comes?—by turning their talents, whatever these may be, to the best account. The other day, I called on a confrere, whose circumstances I knew to be in not a very flourishing condition; I found him busily engaged in painting a portrait; he said that he had sold several of late. But what is your object? said I—'renforcer le metier,' was his answer. If a patient called, he put down his palette, doffed his blouse, slipped on his black coat, and with a grave and becomingly professional countenance went to his consultation-room; no sooner was the interview over than he returned to his studio, resumed his working dress, and set to his painting again with all the cheerfulness of a brave heart. 'I could not help saying, Appollo is god of the arts as well as of medicine.'

"Several young medical men have exerted themselves with success in the way of 'inventions industrielles;' for example, in the manufacture of portable liquid gas, in the construction of a night-telegraph, in preserving timber for ship-building, &c.

"The lamp C———, we owe to the ingenuity of an intelligent physician, who is practising in the suburbs, and who thus diffuses both light and health around him.

"Not a few imitate the example of *Boerhaave*, *Pinel*, and others, and give instructions in languages, mathematics, &c., translating, perhaps, Virgil and Horace in the morning to one set of pupils, and Hippocrates and Celsus in the evening to another. Often the wife, too, lends a helping hand, 'à renforcer le metier,' either in the way of teaching, letting lodgings, or perhaps keeping a little magazine of linen or silk goods, &c.—whatever, in short, brings grist to the mill!"

7. *Compliment to English Genius.*

In a clever defence of the Montpelier School of Medicine from the reproach of having been always too metaphysical in its doctrines, a writer in the French Medical Gazette says,—"The professors, in their lectures, not unfrequently allude to the elementary principles of sound reasoning or logic, and endeavour to test the truth of any novel questions in medical science by appealing to them, on the ground that general philosophy embraces, properly speaking, a code or rule to guide us in deciding upon all matters in detail. Thus it is that our pupils will be found to study the works of the great metaphysicians in conjunction with those of the most celebrated observers of facts, such as *Bacon* and *Hippocrates*, *Locke* and *Sydenham*." Of these four names, England claims no fewer than three.

8. *Quinine in Rheumatism.*

Several of the hospital physicians in Paris have been of late experimenting on the effects of quinine in rheumatism, in consequence of the recent recommendation of this remedy by M. *Briquet*. His colleague at the St. Louis Hospital, M. *Devergie*, has published the reports of a good many cases of the disease, acute as well as chronic, in which he administered quinine with decidedly good effects. In some of those where the inflammatory symptoms ran high, bleeding and other antiphlogistic measures were used at first; but in most the remedy was given from the commencement of the seizure. The dose to adult patients varied from fifteen to thirty grains per day. At the close of his communication, he says:—"In my opinion, too much importance cannot be attached to this discovery of M. *Briquet*." Discovery, indeed!—was not the use of bark in rheumatism strongly advocated by Drs. *Fordyce* and *Haygarth*, more than sixty years ago? and is not mention made of the practice in every English treatise on Practice of Physic? But this only *en passant*.

Neither bark nor its alkaloid salt will ever become a general remedy in rheumatism of the acute kind, except towards the decline of the attack, when the inflammatory symptoms have been subdued, and the pains have become more or less of a neuralgic kind. In chronic rheumatism, especially where the system is feeble and torpid, the use of the decoctum cinchonæ, or of a solution of quinine, is often of very great benefit, either alone or in conjunction with diaphoretic and sedative remedies.

9. *Anti-Neuralgic Pills.*

Dr. *Eisenmann* of Munich, in a well-written paper on the general employment of alterative medicines, points out the utility of combining two or more of them together in certain cases of disease. He dwells particularly on some cases of severe neuralgia, which are more or less connected with an agueish state of the system, but which nevertheless resist the effects of bark alone. If, however, he says, a medicine, which acts on the nervous system, be combined with bark, we shall often succeed in effecting a cure. He strongly recommends a combination of quinine, strychnine, and extract of belladonna. [The remark is very rational and just.]

10. *Usual Course of Rheumatism in the Horse.*

M. *Tessier* remarks that M. *Boullay*, one of the most experienced veterinary surgeons in Paris, assures him that the ordinary course of rheumatic inflammation in the horse is the very reverse of what is usually the case in the human subject. In the latter, as all know, the affection of the joints is primary, and that of the pleura, pericardium, or other internal part is consecutive or secondary; whereas, in the former, pleuritis is generally the primary, and the arthritis the secondary affection.

11. *Successful Case of Cæsarian Operation, successful both for mother and child.*

The report of this case is contained in the number of the Journal de Medicine de Lyon, for last February. The woman was 35 years of age, exceedingly deformed from rickets, and pregnant with her second child; the first had been extracted by embryotomy. The necessary incisions were made, and the child, and afterwards the placenta, extracted in the course of two or three minutes. The child cried lustily when taken out, and continued to thrive. The mother was threatened with peritonitis; but this fortunately subsided, and the wound was nearly quite healed by the fortieth day after the operation.

Clinical Review.

GUY'S HOSPITAL.

GUY'S HOSPITAL REPORTS. Second Series. No. I. April, 1843. Edited by GEORGE HILARO BARLOW, M.A. and M.D. Fellow of the Royal College of Physicians, and Assistant Physician to Guy's Hospital; EDWARD COCK, Assistant Surgeon to Guy's Hospital; EDMUND L. BIRKETT, M.B. Secretary to the Clinical Society; J. H. BROWN, and A. POLAND. London; S. Highley, Fleet Street.

THIS number opens with an Introduction to the First Volume, which is not undeserving of a notice. The editors start with the observation :—

"If any opinion of the wants of the profession can be gleaned from the general spirit of its Members, and if any estimation of that spirit can be derived from the titles and subjects of publications, and the general tendency—at present so evident among us—to form societies for receiving and imparting the fruits of experience, we are fully justified in considering observation to be the governing principle of advancing medicine; and the 'Hoc age' of the present period to be, 'Ut vivas, vigila.' But it must be remembered, that however correct our facts, however trustworthy our modes of determining them, the progress of medicine must also depend on their comparison. The object, therefore, of any medical periodical, whose single aim is scientific improvement, should be twofold—the collection and publication of the results of observation—and the inferences which may thence be justly deduced. On this principle the present work has always been conducted; though the chief energy has been expended on fulfilling the second of these objects; viz. that of giving to the medical world the well-digested inferences of the result of observation in finished treatises. The course the 'Reports' have run, has not been unaccompanied with difficulty; and though perhaps the goal aimed at may not have been reached, still the experience of the seven years which have been now completed—and not, it may be hoped, without a certain amount of usefulness—may be received in evidence of the intentions of the editors, and the success which has been the result.

"We wish now to extend the sphere of this principle; and, in addition to the finished treatises, the works of individuals, with which hitherto our pages have been principally enriched, we propose to illustrate the different classes of disease by the aid of series of Reports, collected within the walls of the Hospital, and furnished by the books of the Clinical Society: and likewise, to apportion a part of each Number to the consideration of anomalous cases from the same source;—a plan we consider fraught with great advantage; as nothing has so great a tendency, either to counteract a too great confidence, or to stimulate exertion, as a proper estimate of our difficulties."

This is so obvious that it almost amounts to a truism. Medicine, like every science of observation, must rest upon facts, and those facts must necessarily form two orders—those which have an affinity to one another, and admit of being grouped and reduced into generalizations, and those which are of a more insulated character, and incapable of being so reduced, either from their own nature or the imperfection of our present knowledge, and so Reports must ever consist, as they always consisted, of matters of facts, generalizations, inferences upon the one hand, and of extraordinary, exceptional, anomalous instances upon the other.

The Editors proceed to give a sketch of the formation and development of the Clinical Society of Guy's Hospital. But this we may pass over. We cannot, however, do so, without expressing our cordial satisfaction at an institution so creditable to the officers of the hospital, who have fostered it, and to the pupils who are the members of it—an institution eminently calculated to breed a healthy spirit of observation in the young men whose zeal it stimulates, whose energies it directs, and whose prospects in after life it must beneficially influence.

The Editors proceed :—

"Their objects have been two-fold—the accuracy, and the number of the reports. And these objects they have essayed to accomplish, by facilitating the duties of reporting: 1st, By the division of labour: and 2dly, By the introduction of formulæ for case-taking. The labours of reporting are of course to be diminished by the number of cases under the charge of each reporter. The whole number of patients in the Hospital at one time is generally about 450—the number of Clerks about 30; giving, as a result, about 15 patients as the average complement of each clerk: and, calculating that there are weekly from 55 to 65 admissions, the duration of each patient's residence in the hospital would be about seven weeks. Each clerk would therefore have to report rather more than two fresh cases every week—a number, considered as an average, and consisting of mixed cases, both mild and severe, simple and complicated; evidently in the power of any student, at the requisite period of his studies, to do ample justice to, without neglecting his other subjects.

"The subject of formulæ requires a more lengthy notice. The objects to be aimed at, in their formation, are, facility of reporting with uniformity, and increased value of the reports. The first object has certainly been attained, even by the full formulæ now in use by the Society. Indeed many have been induced by them to commence a course of clinical study, the difficulties of which they confessed they should otherwise never have surmounted. So we may pass on to the second item; viz. uniformity and accuracy of the report. In the first place, if cases are to be compared—and such is confessedly one of the main objects of their accumulation—uniformity is almost essential; and in order to uniformity, formulæ are useful, if not positively necessary. These may be full or short, general or special. We believe the fuller they are, the greater is the amount of value accruing both to the reporter and the Society; although, as a point of direct consequence, it must be allowed that the errors would probably be more numerous than in shorter forms, though this only holds good as long as no stride is made beyond the defined limit. The next object contemplated is the fulness of the report, with the accuracy of its details; and for this purpose the formulæ must be full, containing a place for every possible item; and yet so arranged, that the reporter be not left in doubt under what head to note any particular symptom; and that space sufficient be allowed for each head. Special forms, although perhaps of great value in the reduction of matter from a large collected body of reports, imply—so at least it appears to us—a greater advancement in medicine than it has hitherto been our lot to enjoy; for how few diseases can be logically expressed—how widely diseases vary, both as to the number and intensity of the symptoms—and how little hope are we at present justified in entertaining that any law regarding the constancy of symptoms is about to be divulged—though we may perhaps expect some result from the consideration of their variations, and the endeavour to determine their value from their relations."

After remarking that the formulæ first introduced proved inefficient, and were of necessity abandoned, they continue:—

"With respect to the construction of formulæ, the rule appears to be concentration of that portion of the report which is usually so indefinite; viz. whatever precedes the admission of the patient, or the first visit of the physician;—with the expansion of that portion of which the reporter can institute his own investigation; viz. the enumeration of the signs and symptoms, suggesting to the

physician the name of the disease; which may be usefully considered as a condensed arbitrary expression for the sum of the symptoms.

"The formulæ we at present employ were suggested by the short forms used by Dr. Conolly, at the Lunatic Asylum at Hanwell; and brought therefrom, in the course of the last summer, by the Honorary Secretary. They have of course been much modified; inasmuch as they are intended for diseases in general, whereas the others are specially designed for one class. They may be divided into several portions, as follows:—

"1. The relations of the patient with respect to the Hospital.

"2. The previous history of the patient.

"3. The causes of the disease, or the link between the previous history of the patient and the present history of the disease.

"4. The history of the present disease, with the date and the order of the succession of symptoms.

"5. The signs and symptoms of the disease, from the sum of which the diagnosis is to be determined.

"6. The history of the progress of the case with the treatment detailed.

"And these again are variously sub-divided, as may be observed by casting the eye over the plan given below.

No. Name of Disease Result

Ward Physician, Date of Admission
No. Reporter
Name Single or Married No. of Children
Age Occupation

Previous History.
- Abode
- Habits of Life
- General Health
- Previous Diseases or Injuries

Causes or Influence.
- Hereditary
  - Health of Family
  - Causes of Death in Family
- Moral
- Physical

History of Origin, with Date of Present Illness, and Order of Succession of Symptoms.

General Aspect.
- Development
- Natural
- Morbid

Position
Integuments and Appendages
Temperature
Moist or Dry
Colour
Œdema
Pain or Tenderness
Ulceration or Abscess
Tumours or Eruptions
State of Appendages

Nervous System
Form of Head or Spine

Pain
Vertigo

Lesions of
- Intellect or Disposition
- Motion
- Sensation
- Special Sensation

Respiratory and Circulating System
Form of Chest

Digestive System
Form of Abdomen

Pain	Pain
Voice	Appetite
Respiration	Nausea
Cough	Vomiting
Sputa	Tongue
Results of Percussion	Mouth and Throat
	Defæcation
Results of Auscultation	Dejections
Respiration	Results of Manipulation
	Urino-Genital System
Voice	Micturition
Heart's Impulse	Urine
Heart's Rhythm	Generative Functions
Heart's Sounds	Lesions of Bones or Joints
Pulse and General Circulation	Treatment

Progress of Case

Treatment	Report

We have inserted the whole of the preceding formulæ, because we think the subject an important one. We quite agree with the editors on the value, indeed the indispensable necessity for formulæ, in order to obtain reports on any scale or of extensive value. And we agree with them too, on the propriety of developing the present and tangible features of a case, while its history is placed in a subordinate position. For it requires little experience in case-taking to learn how little dependence can be placed upon such history. When the defects of memory, habits of inaccuracy, and positive falsehoods on the part of the patient are added to the imperfect methods of examination, leading questions and possible bias on the part of the Reporter, the results are not such as constitute a sound basis for either practical or theoretical conclusions. And such we believe is found to be really the case.

To the formulæ themselves we have little to object. They are elaborate, and as complete as general formulæ can be. Some may think that they sin upon this side, but it must be recollected that they are for the purpose of systematic reporting, on the part of those who are to make it their business.

The contents of the number before us are as follows:

Case of Suspected Irritant Poisoning, with Remarks on the Poisonous Properties of certain Kinds of Decayed Animal Matter used as Food; by Alfred S. Taylor.—Observations on Pelvic Tumours obstructing Parturition; with Cases; by John C. W. Lever, M.D.—An Inquiry into Certain of the Causes of Death after Injuries and Surgical Operations in London Hospitals, with a view to their Prevention; by Norman Chevers, M.D.—Observations on the Structure, Functions, and Diseases of the Coronary Arteries of the Heart; by Norman Chevers, M.D.—Observations on the Digestive Solution of the Œsophagus, and on the Distinct Properties of the Two Ends of the Stomach; by T. Wilkinson King: with a Case, by Mr. John Comley.—A Case of Glanders in the Human Subject; by H. M. Hughes, M.D.—Report of Cases of Hernia, admitted into Guy's Hos-

pital from Sept. 1841 to Dec. 1842; by Alfred Poland, (with Plates.)—Account of Observations made under the Superintendence of Dr. Bright, on Patients whose Urine was Albuminous; by George Hilaro Barlow, M. D.; with a Chemical Examination of the Blood and Secretions, by G. O. Rees, M. D. (with Plates)—Report of Cases of Fever; by J. H. Browne.

I. CASE OF SUSPECTED IRRITANT POISONING, WITH REMARKS ON THE POISONOUS PROPERTIES OF CERTAIN KINDS OF DECAYED ANIMAL MATTER USED AS FOOD. By ALFRED S. TAYLOR.

It appears that "three members of the family of a shepherd—the wife, son, and daughter, the two latter being young children—were taken ill on Sunday, December 20th. The boy, who was about two years old, died the following day. It was supposed that poison had been administered to the family, and that this was the cause of the boy's death.

"The poison was suspected to have been taken at dinner, about 11 A. M. on Monday, December 21st, when all three dined with the father, on some mutton. No satisfactory history could be obtained of the symptoms suffered by the wife and two children on the Sunday, the day preceding. The only account that could be obtained was, that the body of the deceased was swollen all over. The three were, however, better on the Monday. Having dined at the hour above mentioned, and the father having left for his usual work, they were not seen until about two o'clock, when the mother and daughter were in a state of insensibility, and the boy was dead.

"The following account was obtained:—The father stated that after he had dined with the family on the Monday at eleven o'clock, he felt, while at work, a sharp burning pain in his inside, for which he could not account. This was between the time of his leaving dinner and two o'clock in the afternoon. The mother, on her recovery, said that she felt great pain after the meal; but no other account of her symptoms could be procured, except that she foamed at the mouth, and was in a state of great nervous excitement. As far as could be ascertained, she had suffered but slightly from vomiting, and there was no purging. The deceased and his sister were, however, affected both with vomiting and purging. The deceased child died in *less than three hours* after the meal, for he was found quite dead at two o'clock; but no satisfactory account of his symptoms before death could be obtained. It appears, however, that he was very much purged, and that his motions were of a dark green colour. The matters vomited by him were very copious, and streaked with a yellow-coloured substance; these were, unfortunately, thrown away. The matter vomited by the mother is described as having had a bright glistening appearance like quicksilver on the surface.

"The stomach-pump was applied to the mother about six hours after she was found (eight o'clock P. M.;) and the contents of the stomach then drawn off were reserved for a chemical examination.

"The following appearances were met with, on a post-mortem examination of the body of the deceased child (reported by Mr. Cooke:)

"There was no particular appearance externally, except that the cutaneous surface was unusually pallid. The lungs were loaded with blood of a scarlet colour. The heart was natural: the liver of a pink colour, congested with very liquid blood. The stomach contained a small quantity of half-digested food, presenting, on its posterior part, several prominent rugæ, which were inflamed, with traces of inflammation on other parts of the lining membrane. The small intestines were inflamed in their upper portion; but the appearance of inflammation was less marked inferiorly. They contained a liquid mixed with blood. The muscular coat of the rectum was very red; but there was nothing in other

respects abnormal, either in the large intestines or their contents. The peritoneum was highly inflamed. The bladder was contracted; and on its posterior wall were two spots of well defined inflammation. The spleen and kidneys were healthy. About two ounces of bloody serum were found in the cavity of the abdomen. The upper part of the larynx and lower part of the pharynx were inflamed; and there were traces of inflammation at the bifurcation of the trachea. The veins of the head were very full, as well as those on the surface of the brain. The brain was of large size, and well developed: its vessels were congested; but there was no morbid change of structure."

No trace of poison could be detected in the contents of the stomach and viscera. The suspicion of poisoning, however, was entertained, and it was strengthened by the fact, that the man and his wife lived somewhat unhappily together. The husband, himself, who was a shepherd, kept by him a quantity of arsenic and bichloride of mercury, which he was in the habit of using for the purpose of destroying the fly in sheep. It was therefore suspected that one or other of these irritant poisons, or some preparation of barytes, had been administered by him designedly; or that the poison might have become accidentally mixed with the food, and have thus given rise to the illness of all the parties, and to the death of the child.

But there was another explanation of the symptoms. "The mutton which the family had had for dinner on the Monday was part of the body of a sheep which had been affected with 'the staggers,' and which, in consequence, had been killed, and the meat distributed among many poor families in the neighbourhood. It was therefore not unreasonably considered that the very unwholesome nature of this food might sufficiently account for the serious consequences which had followed the meal. It is however worthy of remark, that no other persons of other families, who had freely partaken of the mutton from this sheep, were attacked, or experienced any ill consequences whatever."

The meat could not be procured for examination, but a tin plate which covered it presented no poisonous contamination.

A medical opinion was required of Mr. Taylor, on the cause of death in the child. It might be ascribed to three causes.

1. To some mineral irritant poison mixed with the food.

2. To the poisonous nature of the food itself; either from the animal having been killed while in a diseased state, or from the flesh having become partially decayed.

3. To natural causes.

These hypothetical cases are examined with such ability by Mr. Taylor. The curious we must refer to the original. The pros and cons under each head are carefully weighed, and Mr. Taylor comes to the conclusion that there is no evidence of there having been a mineral poison at work—nor of death from natural causes—but that the meat was at the bottom of the mischief. He conceives that there are only three ways in which the features of the case can be explained.

(1.) That the effects were due to idiosyncrasy; the diseased mutton not possessing any injurious properties, but being rendered poisonous by peculiarity of constitution in this family.

(2.) Admitting that there was no such peculiarity of constitution, that the disease in the sheep had especially affected and rendered poisonous that particular portion of the flesh which had been taken by this family.

(3.) That the effects did not depend on idiosyncrasy, or on the disease with which the sheep was affected; but that decay had commenced in the portion of it assigned to this family, and that thereby an animal irritant poison had become generated.

Of these hypotheses, he is inclined to adopt the third; and, in the course of the paper, he cites some striking facts, in support of this opinion. One or two may not be out of place even here.

"At a public festival at Zurich, in the year 1839, upwards of 600 persons partook together of a repast, consisting chiefly of veal, roasted or in cutlets. At *variable periods* afterwards, nearly all of these individuals were taken ill; and in a week most of them were confined to their beds. They were affected with rigors, vertigo, headache, intense fever, diarrhœa, vomiting, and, in some instances, delirium. At a later period, an abundant flow of fetid saliva occurred, the interior of the mouth being covered with ulcers; and in many cases, after involuntary discharges of the fæces, great prostration of strength, and death, ensued. In these cases, the mucous membrane of the digestive canal was found softened, the intestinal follicles ulcerated, and the veins empty. It was afterwards ascertained that the veal, when eaten, had been in an *incipient* state of putrefaction."

In another case related by Dr. Christison, the putrefaction of veal had gone farther, so far indeed as to have converted it into something approaching to adipocere. Several persons who ate of it were all seized with pain in the stomach, efforts to vomit, purging and lividity of the face, succeeded by a soporose state, like the stupor caused by opium, except that when roused the patients had a peculiar wild expression. One patient died comatose in the course of six hours. The rest, being freely purged and made to vomit, eventually got well; but for some days they required the most powerful stimulants, to conteract the exhaustion and collapse which followed the sopor.

After partaking of a roebuck, killed in a state of excessive terror and exhaustion, several persons experienced a violent gastro-intestinal inflammation, with other symptoms like those already detailed. Here the flesh was *not* in a putrefying state.

But we need not pursue this subject. We strongly recommend our readers to peruse the original paper, which, like all of Mr. Taylor's on matters connected with medical jurisprudence, is distinguished by sound sense and correct reasoning.

II. Observations on Pelvic Tumours obstructing Parturition; with Cases. By John C. W. Lever, M. D.

In a former paper, Dr. Lever makes some remarks on those tumours which implicate the pelvis itself, as well as those organs and structures concerned in the birth of the child. He now turns to those tumours which belong to or implicate the parts in the neighbourhood of the birth passages. This division includes—*A*. Tumours of the ovaries. *B*. Tumours of the Fallopian tubes. *C*. Tumours of the rectum. *D*. Tumours of the bladder. *E*. Tumours in the cellular tissue of the pelvis; and, *F*. Those varieties of pelvic hernia which may and do occasionally offer an obstruction to the course of natural parturition.

A. *Tumours of the Ovaries.*

The ovaries are liable to various diseases and displacements: thus, there may be inflammation and its consequences; there may be encysted dropsy; the ovary is liable to be affected with specific and malignant tumours; and lastly, it may be displaced or dislocated. Inflammation of the ovary may be either acute or chronic; and may cause induration, softening, or suppuration of the organ. The ovary is also liable to the encysted form of dropsy—to osseous, cartilaginous, and scrofulous and tuberculous tumours—to cancer and melanosis.

The ovary is subject to displacement within or without the pelvis. This may be a consequence of displacement of the uterus. Inflammation may fix the ovary in its morbid position.

The ovary may become displaced, when it may remain within the pelvic cavity, or escape from it. Displacement of the uterus may disturb the ovary; inflam-

mation supervening on its malposition may glue it in its new place. The enlarged ovary falling into the recto-vaginal pouch may form a serious obstacle to the progress of labour.

In extra-pelvic displacement, the ovary may be found in an umbilical, ischiatic, femoral, or inguinal hernia.

"When pregnancy is complicated with enlargement or misplacement of the ovary, it is of great importance to ascertain the extent, situation, size, shape, density, and connexions of the obstruction. The enlarged ovary may be seated above the brim of the pelvis, or it may descend into that cavity occupying the side corresponding to the ovary affected: in other cases, although the ovary descends into the pelvic cavity, its mobility is so great, that there is no difficulty in lifting it up, and in placing it above the brim, as was done in Cases 34 and 35.

"Where the tumour is of the congested form, large, and confined to the abdomen, it may produce lateral obliquity of the uterus; and so render the labour tedious, preventing the presentation from entering into the brim, as in Case 34."

Ovarian tumours, complicated with pregnancy, vary, as might be supposed, very much in size. They have been known to occupy the whole pelvic cavity.

It is of consequence to ascertain the consistence of these tumours. If fluctuation is indistinct, Dr. L. approves of an exploratory puncture. In short, he is of opinion, that, in all tumours of this kind, impeding labour, we are justified in assuring ourselves of the nature of the tumour before proceeding to perform the operation of embryotomy.

The diagnosis of ovarian tumour, when complicated with labour, is not always easy, particularly when the patient is not seen till she is in labour.

"In forming our diagnosis, we must be guided by the history, situation, and shape of the tumour. If an examination be made before the child's head has descended into the pelvis, or if there be no adhesions and the tumour be moderate in size, its displacement and reposition may enable us to determine its nature. If the tumour be encysted, it is elastic, soft, and fluctuating, becoming more tense during the uterine efforts; or by them it is urged into the pelvic cavity, or the child's head is pressed against it, which took place in Case 38. But otherwise, whether it be of a non-malignant or malignant nature, uterine pains will not increase its tensity, neither will it become flaccid when the efforts cease; in short, the only effect produced by the pain is a forcing down of the tumour *en masse;* so that, in order to arrive at a correct diagnosis, we should examine the tumour both during and in the absence of pains. Exploration already referred to should be made in every case in which doubt exists, before we proceed to destroy or even risk the child's life. The history of the examination of the case, both *per vaginam* and *per anum*, will, I think, in every case, enable us to decide the the obstruction to be ovarian; for if due caution be employed, it can neither be mistaken for disease of the uterus nor vagina. The cases which are most likely to be confounded with ovarian tumours are those in which encysted or other tumours are developed in the cellular tissue, between the rectum and the vagina; but this is but of little consequence, as the treatment in both cases is founded upon the same principles."

Prognosis.—This must be considered in reference to the mother, and the child. It must mainly depend upon the size, seat, mobility, and nature of the obstruction.

"If the tumour be small, if it chiefly consist of fluid, or if we are able to return it above the brim of the pelvis, there is little or no danger to be apprehended, either to the mother or the child; but if the tumour be large, solid, firmly adherent, and if it occupy the cavity of the pelvis, the operation of craniotomy will very probably be necessary; and the difficulty in performing that operation, as well as the injury the parts may sustain during the delivery, will render the re-

covery of the mother a question of great uncertainty: or, lastly, the labour may be so protracted, that the patient may die of exhaustion. Puchelt, who has collected together thirty-one cases, mentions but one (that related by Busc) in which the woman died undelivered, although he alludes to several which proved fatal after delivery, either from exhaustion or inflammation. Our prognosis, therefore, must be based upon the nature, size, and mobility of the obstructing tumour. Of the thirty-one cases related by Puchelt,

1 died without being delivered;
14 died soon after delivery;
3 died from other causes; and
13 recovered.

31

Dr. Merriman states that, out of eighteen cases,

9 women died;
3 . . . . recovered imperfectly;
while 6 . . . . recovered perfectly.

18

With regard to the child, our prognosis will depend on the same causes that influence us in determining that of the mother.

Puchelt states, that—

21 children died before delivery;
2 . . . . . after delivery;
7 . . . . . were born alive;

while in 2, the result is not stated.

In Dr. Merriman's cases, the still-born children amounted to 16, and those born alive to 4."

Treatment.—If the tumour, from its site, offers little obstruction to the birth of the child, or if it be so compressible as to let the head pass, labour may be naturally completed. Sometimes, where the tumour is caused by encysted dropsy, it is quite above the pelvis, and, so soon as the head is engaged in the pelvic cavity, the labour goes on naturally: but owing to the obliquity of the uterus caused by the tumour, the first stage of labour is lingering, as the head, or presenting part of the child, does not enter the brim of the pelvis in the most favourable manner. In all cases, whether the tumour is above the pelvis or within it, we should give full trial to the natural efforts; at the same time taking care not to defer our assistance too long, as the injury the soft parts may sustain may lead to fatal results.

Reposition.—In some cases, the tumour may be placed above the brim of the pelvis, out of harm's way, until the head has entered the pelvic cavity, when no obstruction is then to be apprehended. All accoucheurs concur in recommending this, when it can be effected, and there are many recorded instances of success under great difficulties.

Puncture or Incision.—"Dr. Merriman states, that in six cases out of those recorded by him, the tumours were opened; in three, the labour was left to Nature to complete. Two of the women recovered, but the other remained for a long time in an ill state of health: two of the children were preserved. In the remaining three cases in which the tumours were opened, the use of the perforator was afterwards necessary: one of the women died, one remained in an ill state of health for eighteen months and then sank under her sufferings, while the third recovered. Dr. Ingleby is an advocate for the operation; and the case recorded at p. 126, which I have previously referred to, shews how likely even experienced

medical men are to be deceived by the mere feel of the tumour. In this case, the sensation conveyed to the finger was that of an osteo-sarcomatous tumour: it felt precisely like a large mass of cartilage: it was not softer in one part than another: there was no fluctuation; and it was not harder during the pains than during their absence; but still, when a long curved trocar was introduced into the tumour through the rectum, about seven ounces of a clear straw-coloured viscid fluid, which proved to be albuminous, escaped through the canal: and although this was not followed by the natural expulsion of the child's head, still it rendered the operation of artificial delivery much more easy: and in Case 36, the tumour was supposed to be a solid body. I have before stated that, in my opinion, in every case, we ought to perform the operation of puncture before we have recourse to the more serious operation of embryotomy."

If the contents of the tumour are too thick to pass through a canula, an incision may be made. Some advise this to be made per rectum—others per vaginam. To this latter more natural opinion, Dr. Lever inclines.

Extirpation of the Tumour.—The following are Dr. Lever's sentiments on this head.

"If the tumour be of such a size or nature that its contents may be evacuated or lessened by the operation of puncture or incision, the operation of extirpation should not be entertained; neither, in my opinion are we justified in resorting to extirpation, if we can deliver the child with the aid of the embryospastic instruments. But if they are inadmissible—if the tumour be so large, firm, and adherent, that, by its bulk, it prevents the descent of the child's head—by its incompressibility, it does not yield to pressure—by reason of its solidity, its contents cannot be discharged, either by the operation of puncture or incision—and by its confined and fixed position in the pelvis, it cannot be replaced—then I am of opinion that the operation for extirpation is called for, and justifiable."

He cites Dr. Merriman in support of this opinion.

Turning—This Dr. Lever condemns. For, he argues, "if the tumour be so compressed that the hand can be readily introduced for this purpose, it is far better to wait and trust to the natural efforts, or to evacuate the fluid contents of the obstructing tumour: for the operation of version must be attended with some degree of violence and risk; and indeed, should we succeed in passing our hand and bringing down the feet, the greatest difficulty will be experienced in the delivery of the shoulders and head. In five cases related by Dr. Merriman, the labour was terminated by turning the child: all the children were lost, and but one of the mother's recovered."

Delivery by Embryospastic Instruments.—Dr. Lever conceives that these cases are not generally suited for this mode of delivery. If instruments are required, they are usually those which evacuate the tumour, or remove at once, or those which lessen the size of the child and reduce it to the size of the contracted opening through which it has to pass.

Cephalotomy.—"Six cases are recorded by Puchelt in which the operation of cephalotomy has been had recourse to. Of these six, but three women recovered. Dr. Merriman states, that in his eighteen cases 'the perforator was used five times, after a longer or shorter duration of labour.' Of these women, three died; another recovered very imperfectly; and one got well. The perforator was had recourse to also in three cases after the tumour had been opened, one of these women died, one remained in an ill state of health for eighteen months and then sank under her sufferings, while the third recovered."

Cæsarean Section.—Dr. Lever knows of no case in which this has been performed.

Induction of Premature Labour.—After some remarks, Dr. Lever concludes, that, if we find the tumour solid, firmly fixed in the pelvis, and not permitting reposition—if from our examination we are convinced of the impracticability of using the embryospastic instruments—then the operation for the induction of premature labour may be had recourse to.

Dr. L. relates six cases, for which we must refer our readers to the Reports themselves. We proceed therefore, to

B. *Tumours of the Fallopian Tube, obstructing Parturition.*

The conditions of the Fallopian tubes which may lead to the protraction of labour, are abscess, the result of acute inflammation dropsy, and tumours, both of the non-malignant, and malignant form. Cases of this kind occur but seldom. He quotes one which occurred to Chambry de Boulage. He goes on to observe: "When the tube is affected with swellings or tumours, it is found to leave its natural situation, and to occupy the pelvis below the pubic bones, but inclining, more or less to the side where the tumour grows. If such a case should present itself to the accoucheur, the tumour should, if possible, be placed above the brim of the pelvis; but if this be impossible, it may be punctured, to permit the discharge of its contents: but if they be of so tenacious and thick a nature that they will not flow through a canula, then an incision may be made, in order to empty the containing sac. But if the tumour should be solid, and the pelvis seriously obstructed, we shall have to decide between the performance of the operation of cephalotomy and Cæsarean section. During the performance of the latter, we may possibly be able at the same time to remove the obstructing tumour."

C. *Tumours of the Rectum obstructing Parturition.*

1. *Tumours of the Rectum from Impacted Fæces.*—Such a cause of obstructed parturition is a well known one. The examination *per rectum* confirms what that *per vaginam* indicates. The double examination is obviously requisite. This source of obstruction can only occur when patients have not been sufficiently attentive to their bowels during the latter months of pregnancy. Glysters, or the scoop, and purgative medicine are the remedies.

2. *Scirrhus.*—Dr. Lever gives a case which we need not introduce. Examination per rectum et vaginam, determines the nature of the malady. Its *treatment* quoad delivery, is thus set forth:—If labour be interfered with, he thinks that the forceps will, in most cases, be sufficient to complete the delivery: at the same time, when we employ them, we must remember that, generally, the recto-vaginal septum is more or less implicated; so that it does not admit of that distention which, in its normal condition, it will allow. But if these be employed, and if, after gentle and judicious traction, they are found unequal to accomplish the delivery, we have then to decide between the delivery of the child by the operation of cephalotomy, and the performance of the Cæsarean operation.

D. *Tumours of the Bladder impeding Parturition.*

1. *Distention of the Bladder.*—This may obstruct labour, not only by interfering with the action of the womb, but by preventing the child from occupying the cavity of the pelvis.

The retention of urine is occasioned by the pressure of the presenting child on the neck of the bladder or urethra. Nor is it necessary that the full period of gestation should be accomplished for this stoppage to occur. M. Costes relates a case in which it happened at seven months and a half. The catheter could not be passed, and it was necessary to puncture the bladder. Rupture of the viscus has been known to take place. The bladder may become much dilated, so much so as to contain eleven pints of urine.

In some cases, the urethra is elongated, so that, although a full-sized catheter be passed, it is not sufficiently long to reach the chamber in which the urine is confined, or the urethra may be blocked up by a small calculus. Paralysis of the bladder may exist. Whatever be the cause, it is of the first consequence that distention of the bladder be not overlooked.

"When such cases present themselves to our notice, we must not be satisfied with the reports of nurses; for it is no unusual thing for them to say, 'the water is constantly dribbling,' or, 'flowing' even when the obstruction is so complete, that none, by any possibility, could have escaped. Medical men themselves occasionally fall into this error. I have, on more than one occasion, found the great distention of the bladder to be the obstructing cause of labour, when the surgeon in attendance has reported the passage of the urine to be copious and free. When the bladder is distended, pressure by the hand causes much suffering; and every return of labour-pains, accompanied as they are by contraction of the abdominal muscles, greatly augments the sufferings of the patient, from the pressure upon the distended viscus: in fact, in most cases, the woman loses all other pains, and complains of those seated at the bottom of the belly. When we examine to ascertain the state of the os uteri, we oftentimes find it inclined backwards; and if we succeed in pushing up the uterus to ever so slight a degree, a gush of urine will take place, but only in those cases where the distention is caused by the pressure of the presenting child. Moderate attention on the part of the accoucheur will, in most cases, suffice to prevent the accumulation of the urine; for if the patient be unable to pass the water, the catheter should be from time to time introduced. But if we are called to a case in which there is distention, we should first pass a common-sized flat female catheter. If there be a calculus at the commencement of the urethra, opposing the introduction of the instrument, we should endeavour to extract it by means of a pair of forceps: and if we should not succeed with them, the calculus, if of small size and not likely to interfere with the subsequent stages of labour, may be passed backwards into the bladder, and its removal left for a subsequent opportunity: but if its size be so large, that it alone may lead to the obstruction of the labour, or may cause sloughing or laceration of the neck of the bladder, we should remove it by an incision; as by this operation we not only get rid of the accumulation, but also of the cause of the accumulation; and thus a double obstruction is removed. If no calculus exist, and the common-sized catheter is found to be too short to reach the accumulation, an elastic gum male catheter, or one flattened like the female catheter, may be employed. In passing this instrument, it is generally necessary to raise the presenting part of the child with one or two fingers of the left hand, when the instrument is readily passed on, and the bladder emptied. If our best endeavours fail to pass either instrument, it will be better to puncture the bladder above the pubes, than run the risk of a rupture taking place, which will inevitably prove fatal."

2. *Calculi in the Bladder obstructing Labour.*—There are sufficient cases on record to prove that this mode of obstruction may occur. The diagnosis may not be very easy. Vaginal examination may lead to the suspicion—the history of the previous symptoms may strengthen it—but sounding alone can confirm it.

"I have stated, that the tumour formed by an obstructing calculus is usually moveable in the absence of pain; but it sometimes happens that the tumour becomes firmly wedged between the head of the child and the arch of the pubes, if the labour be allowed to go on without assistance. If the calculus, during the descent of the head, remain at the upper part of the vagina, it will not impede the delivery; and the head, descending into the pelvis, will itself prevent any future obstruction from the foreign body; but if the calculus fall into the neck of the bladder, and be placed below the head, the labour will be rendered difficult; since the conjugate diameter of the pelvis is contracted by the presence

of the foreign body. In forming our prognosis of labour complicated with stone, we must take into consideration not only the size but the shape of the calculus; for the stone may be so large, that although it be seated in the bladder itself, and not interfere with the inlet of the pelvis, yet by its size it may, when pressed against the uterus by the contraction of the abdominal muscles, seriously interfere with the powers of expulsion; and, of course, if seated in the neck of the bladder, the amount of obstruction must be proportionate to the size of the stone: and even if labour be accomplished without the employment of instruments, the injury which the neck of the bladder may sustain will be followed either immediately or remotely by a vesico-vaginal fistula, which may embitter the remainder of the patient's days."

Treatment.—If the calculus is discovered during pregnancy, it should be removed before labour commences—if only detected when the patient is in labour, the case may be left to the natural efforts, if the calculus be small, or if it be seated in the cavity of the bladder above the head of the child. If the stone is large, or placed below the head of the child, other measures are requisite. The stone, if possible, should be pushed back into the cavity of the bladder, above the brim of the pelvis, by introducing a catheter into the urethra, and one or two fingers into the vagina. If the calculus cannot be replaced, it must be extracted, either through the urethra or by lithotomy above the pubes.

Extraction through the urethra by gradual, or more sudden dilatation, appears, says Dr. Lever, most applicable to those cases in which the calculus is seated at the commencement or in the urethra itself. Incontinence of urine not unfrequently follows.

If dilatation is inadmissible, lithotomy may be resorted to. It should not be deferred too long.

"The *high operation*, which has been recommended by some writers, appears to me to be more fitted for performance during gestation; as in the case related by Velpeau. The operation of version, advised by some authors, as Smellie, Velpeau, &c., appears to me to be entirely out of the question: for although we may introduce the hand without difficulty, and turn with great ease, yet there will be the same obstruction to the passage of the child's head which there was when the head itself was presenting. If the stone be of small size, and the head be engaged in the pelvic cavity, its advance may be assisted by means of the forceps. The perforator was resorted to in the case related by Threlfall; but the nature of the case was not properly understood by him when he undertook the performance of the operation; for he mistook the obstruction for one connected with the ovary, and did not even pass a catheter to ascertain the state of the bladder. But rather than have recourse to this operation, I think it will be much better to remove the stone in one of the modes above recommended: for, in my opinion, we are not justified in taking the child's life, when it can be saved by the performance of so easy an operation as that of lithotomy, which at once removes the obstruction, and does not subject the patient to greater risk than the operation of cephalotomy, under the circumstances."

3. *Obstruction to Labour, caused by Scirrhus of the Bladder.*—Dr. L. has seen one case of obstruction produced by a scirrhous condition of the bladder and anterior wall of the vagina. The disease will be recognized by vaginal examination, combined with the symptoms and general diathesis. Such a case must be treated like one of scirrhous rectum.

4. *Descent of the Bladder obstructing Labour.*—"The bladder in some cases descends before the child's head during labour, forming a serious obstruction to the process of delivery. It may descend during gestation; or it may take place for the first time during the early stages of labour, before the head is engaged in

the pelvic cavity; and it probably is caused by the pressure exercised by the descending head upon the fundus or middle portion of the viscus, at a time when it is partially distended with urine.

"The symptoms which attend this displacement are, a bearing down in the region of the pelvis, accompanied by the sensation of pain, dullness and soreness; there is a dragging from the umbilicus, or from a spot between it and the pubes; there is constant desire to pass the water; but the attempts to micturate are fruitless, although each return of uterine efforts is, in some cases, attended with the discharge of urine. When a vaginal examination is made, a tumour is found seated at the upper anterior and lateral part of the vagina, of a more or less oval form, smooth, fluctuating, and varying in size, according to the amount of displacement, and the quantity of water the bladder may contain. The tumour is seated below the head, if that present; and every successive return of uterine effort increases its tensity, especially in those cases where the urine does not escape. The size of these tumours varies: in some cases they are as large as the head of a new-born child. If a catheter be introduced into the urethra, it will at once detect the seat and nature of the tumour, and relieve the bladder of the accumulation, and so remove the obstruction."

The prolapsed bladder has been mistaken for a hydrocephalic head, for the membranes of the ovum, and punctured in consequence—or it may be confounded with ovarian tumour, encysted tumours of the vagina or pelvis, and vaginal hernia. The evacuation of the swelling by the catheter marks the diagnosis.

The treatment consists in the continual introduction of the catheter into the bladder, and the evacuation of the urine until the head of the child occupies the pelvic cavity, and prevents both the accumulation and descent. After the evacuation of the urine, the bladder should be passed up, and retained in its situation by two fingers of the left hand until the head occupies the pelvic cavity.

The perineum is in some rare instances the seat of a vesical hernia.

E. *Tumours of the Cellular Tissue of the Pelvis, obstructing Labour.*

The tumours of the cellular tissue of the pelvis have been divided into steatomatous, scirrhous, encysted, and hydatic tumours, to which may be added such as are occasioned by pelvic abscess.

1. *Steatomatous Tumours* may arise from any part of the pelvic cavity: they have been found growing from the sacro-sciatic ligaments, from the cellular tissue between the vagina and urethra, and from that covering the linea innominata, as well as from that lining the sacrum. The size of these tumours varies: in some cases they occupy almost the whole of the pelvic cavity.

2. *Scirrhous Tumours*, as scirrhous glands, may be situated along the cavity of the sacrum, and "may be recognized by their locality, irregularity, and hardness. Examination of these swellings usually causes much pain; and they are found to be placed externally to the vaginal coats, and more or less firmly attached to the surrounding structures. This condition of the several glands is usually associated with cancer of the womb in an advanced stage; and although the os uteri may have permitted the head to pass through." Dr. L. relates a case in point.

3. *Encysted Tumours.*—"These may be generally recognized by their fluctuation, by their being capable of being defined, by their freedom from pain, &c. They may readily be distinguished from hernia of the bladder, or rectum, for which at first they are likely to be mistaken: the introduction of the catheter into the bladder in the one case, and the finger into the rectum in the other, will at once determine the point: but they are not so easily distinguished from drop-

sical or enlarged ovarium; neither is this of much importance, for the same principles which guide us in the management of the one case will direct us in the treatment of the other."

4. *Hydatids.*—A well-marked case is related by Meyer.

5. *Pelvic Abscess.*—This is preceded or attended by the ordinary symptoms of the formation of matter. It may be mistaken for an enlarged and dropsical ovary. A puncture suits both.

Treatment.—It is not only necessary to ascertain the situation, size, and boundaries of these tumours, but their solidity and firmness also. "If the pelvis be of good size, the labour will most probably be terminated by the natural efforts, as in the case related by Dr. Denman, in his Second Volume. If the natural efforts are unequal to the delivery, I do not think we shall save the child's life, or in many instances succeed by the use of the forceps. Dr. Blundell says, 'The application of the forceps in these cases is an excellent topic of obstetric dispute;' but unless the tumour is very small, we may scarcely hope to accomplish the delivery by the use of this instrument: in short, the attempt at its introduction in some of the cases would have failed, whilst in others, if applied, its use would most probably have been disastrous. In the majority of these cases, therefore, I am of opinion that the forceps are inapplicable." "The attempt at reposition will not succeed in most of these tumours; for they are generally firmly attached to the parts in which they are imbedded, and therefore will not admit of removal, from the pressure of the presenting child. Version recommended by some authors, I regard as entirely out of the question; for by altering the position of the child we do not remove or lessen the opposing cause; we merely afford the accoucheur an opportunity of using more violence in attempting the delivery, and thereby sacrificing the life of the child, and endangering that of the mother. In the case of Mrs. S., related by Dr. Merriman in the Tenth Volume of the Medico-Chirurgical Society's Transactions, where the operation of turning was performed, the lives of both mother and child were lost. In a case related by Osiander, where the tumour grew from the middle of the left linea innominata, the child was still-born, although the mother recovered. If the tumours be of a fluid nature, as encysted tumours or abscesses, they should be punctured, in order that their contents may be got rid of; but if the substance contained within the cyst be too thick to pass through a canula, an incision should be made, in order that the sac may be emptied; when, the cause of obstruction being removed, the delivery of the child may be left to Nature, if the uterine efforts still continue; but if they have ceased, its extraction may be accomplished by means of the embryospastic instruments. If the tumour be so large as to occupy a considerable portion of the pelvis—if it be so dense and solid, that an exploratory needle passed into it fails to detect any fluid—if it be thought of a scirrhous or steatomatous nature—then we have to decide between the removal of the tumour, the performance of cephalotomy, and the Cæsarean operation. The success which attended the performance of the operation by Dr. Drew, who removed the tumour by the perinæum, has already been referred to. A similar case is recorded by Burns: both mothers were saved, although but one child was born alive. The tumours which formed the causes of obstruction in the cases of Siebold and Osiander, before noticed, might no doubt have been removed, without much difficulty to the operator, or danger to the mother. The cases that seem to be adapted to this means of relief are, doubtless, steatomatous growths; for they are more defined, less closely attached, and more moveable than other tumours. Scirrhous tumours, when they exist, or the scirrhous enlargement of the glands, are not fitted for the performance of this operation; while hydatid, encysted, and suppurative tumours may be diminished by

the operation of puncture or incision. The operation of cephalotomy does not seem successful in saving the lives of the mothers in those cases in which it has been resorted to: in fact, if possible, I would rather remove the obstructing cause, than expose the woman to that violence which is necessary to deliver the child even though the head be lessened as completely as possible: and rather than resort to the employment of such violence in effecting the delivery, I would prefer the Cæsarean section; as I think, if that were performed early, the mother would have a better chance of ultimate recovery."

r. Pelvic Herniæ.

The pelvic herniæ which may obstruct parturition are—vaginal herniæ—and perineal herniæ.

Vaginal Herniæ.—"The displaced parts either protrude between the bladder and the anterior part of the uterus and vagina (although its occurrence is not very frequent either in pregnancy or parturition,) or below the posterior part of the canal and the rectum. When these displacements take place, they occasionally become an impediment to the progress of labour. The size of the protrusions differs. Smellie has related a case in which the finger only could be inserted between the hernial tumour and the symphysis pubis. This displacement does not often occur in primiparæ, although I have seen it in a first confinement: it more often takes place in females in whom there exists great laxity of the canal, from having given birth to many children, or from having undergone difficult labours. Chelius regards a posterior inclination of the pelvis as a predisposing cause. The exciting causes are, lifting heavy weights, violent strainings in evacuating the fæces or in childbirth, &c. The diagnosis of vaginal herniæ is highly important; the tumour is found to have formed suddenly, or it may gradually enlarge: it is of an ovoid or round shape, elastic, soft; and when pressure is made, it communicates a gurgling noise; if it contain intestine, it is larger in the standing than sitting posture; altogether disappearing when lying down; becoming painful to the touch when it has long been pressed upon by the child's head; and accompanied with nausea, vomiting, colicky, and other pains attending incarcerated herniæ. When the patient lies down, the tumour, as I have said, in most cases, returns spontaneously: in other instances it may remain; and its removal from the sac is accompanied with the gurgling noise which we know attends the reduction of other herniæ. If the patient cough, the hernial tumour will return, and may be again replaced. If the tumour contain merely omentum, it will give an unequal doughy feeling to the fingers: its shape is mostly cylindrical, its base wide, its formation more slow, and the patient feels a dragging from the scrobiculus cordis. The mouth of the womb is seated above and anterior to the tumour. It is sometimes difficult to distinguish vaginal hernia, especially when it is situated between the vagina and the rectum, from other tumours which form in that locality; but the history of the symptoms, the recurrence of the swelling, the change which takes place in the alteration of posture, the symptoms which accompany the delivery, and a careful examination, are the grounds upon which we should frame our diagnosis. In forming our prognosis where labour is thus complicated, we must be guided by the size of the protrusion, and the nature of the parts therein contained. In all cases, the child's life must be more or less endangered, from the narrowing of the passage, and from the protraction of the labour. The mother's life may be secondarily endangered (although she be delivered) from the sequences of inflammation of the intestines."

Treatment.—The hernia should, if possible, be returned before the child's head occupies the pelvis. This may be attempted with the patient on her left side, or back, or even on her knees and elbows. When the hernia has been replaced, it must be kept so, till the head of the child occupies the pelvis. If the

hernia should be strangulated, with the head pressing on it, we should at once deliver by the forceps, or open the head of the child, and finish delivery as fast as possible. The hernia must afterwards be treated on common surgical principles. The patient should wear an oval pessary, or one of caoutchouc.

Perinæal Herniæ.—The intestine descends to the perineum, between the rectum and vagina. It may be detected through both. In the taxis, the pressure may be applied through the rectum or vagina.

This concludes Dr. Lever's memoir, of which, with the exception of the cases, we have given an ample account. It is well worth the attention of every practitioner engaged in operative midwifery.

III. AN INQUIRY INTO CERTAIN OF THE CAUSES OF DEATH AFTER INJURIES AND SURGICAL OPERATIONS IN LONDON HOSPITALS. With a view to their Prevention. By NORMAN CHEVERS, M.D.

Such an inquiry is certain to be interesting, and may be useful. Notwithstanding the valuable facts and observations which have, from time to time, been communicated to the public, a complete investigation and exposition of the subject are desiderata.

Dr. Chevers remarks that, though great improvements have been made in the mode of performing operations, and in the regimen and treatment of patients, both before and after them, their fatality is still great. His remarks on the statistics of operations are just. Admitting their utility, he observes:—

"But in one main point, these statistical observations fail in practical utility—in not admitting of being generally applied; for, as the results of operations are evidently greatly modified by locality and individual idiosyncrasy, they can scarcely ever be expected to correspond in any two situations or classes of persons. To illustrate the uncertainty which may attend the results of surgical operations, even when performed by one set of surgeons in different hospitals of the same town, I may quote a fact lately brought forward by M. Malgaigne, who states, that strikingly various degrees of success attend amputations in the several large Parisian hospitals; that in the most fortunate hospital for pathological amputations,* one death occurred in five; in the least fortunate, nine in ten; in the most fortunate for traumatic amputations, three deaths occurred in ten; in the least fortunate, all the patients who had been operated upon, died. It is evident that these results must depend upon some peculiar circumstances, either in the localities of the respective hospitals, or in the constitutions of the patients admitted to each; as it is stated that equal degrees of ill-success do not attend the same surgeons in their operations at different hospitals."

He proceeds to examine the causes of death after operations. They appear to resolve themselves into three distinct classes—the Primary, Secondary, and Remote.

"The first of these, or *Primary*, will include all fatal accidents which may occur during, or very shortly after, operations or injuries: such as, death from

Collapse,
Hæmorrhage,
The admission of air into the veins, or
The sudden occurrence of any internal lesion.

The *Secondary* include those fatal causes which are liable to come into action

* "Under the head of 'Pathological Amputations,' M. Malgaigne includes all those which are resorted to for the removal of ordinary disease: under the 'Traumatic,' those which are rendered necessary by wounds.—*Archives Generales.*"

within a few hours or days after the receipt of injuries or the performance of an operation. They may be sub-divided into two sets:

"1st, Those which appear to depend upon some obscure lesion of the nervous system; as, for example,

Tetanus,
Delirium tremens,
Irritative Fever.*

"2dly, Those which are attended with some manifest local change; such as,

Arachnitis,
Pleurisy,
Pneumonia,
Pericarditis,
Endocarditis,
Aortitis,
Peritonitis,
Purulent Arthritis,
Suppuration in the Liver, or other Abdominal Viscera,
Phlebitis and Arteritis,
Laryngitis and Diptheritis,
Enteritis,
Secondary Hæmorrhage,
Sloughing,
Erysipelas.

"Lastly, the *Remote* causes will comprise those which produce death after an interval of some weeks or months has elapsed, from the date of the operation or injury. The principal of these are,

Profuse Suppuration,
Secondary Fever,
Caries of Injured Bone, with Suppuration,
Phthisis.

"There are also several fatal causes which may come into action at almost any period between the time of the injury and the complete healing of the wound; such as, hospital gangrene, and various forms of endemic and epidemic fever."

Dr. Chevers informs us that his observations will apply principally to those causes of death included under the *Secondary* class—affections, mostly inflammatory or suppurative of surfaces or parts, unconnected directly with the original seat of disease or injury.

He quotes some authorities on the existence and prevalence of these secondary affections, hardly, however, doing justice to some, and rather understanding, we conceive, what is known of them. He then proceeds to inquire into their ultimate causes, on which he concludes, and we quite agree with him, that the present state of our information is exceedingly unsatisfactory. After noticing the more prominent of the theories upon the subject, Dr. Chevers proposes, what, perhaps, he may be unwilling to admit to be his own: He says:

"It has always appeared to me that there is probably one set of definite constitutional causes, which is ever ready to call these local mischiefs into fatal action, immediately upon the individual being subjected to any kind of unusual vicissitude or injury.

"There is a very large class of individuals in this motropolis, and probably in

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* "I have here submitted to the custom which places Irritative Fever among the obscure affections of the nervous system; but it is certain that cases in which death is attributed to constitutional irritation occasionally occur where the whole train of symptoms characteristic of this state appear to depend upon a condition of general Arachnitis, which is found upon dissection."

most of our densely-populated towns, in whom excessive labour, constant exposure to extreme changes of temperature, intemperance, and not unfrequently the action of syphilis and the abuse of mercury, have produced such a generally-diseased condition of the system, that its powers of reparation after injury have become almost entirely destroyed. It will indeed often happen that these individuals are for a long time enabled to follow their ordinary avocations without appearing to suffer much inconvenience; but so soon as they become the subjects of any injury, as a contusion, a fracture, or even a slight puncture or laceration, any surgical operation, sudden loss of blood, or, in short, any depressing or exciting influence which tends to produce increased derangement of their organs of circulation and elimination, they almost inevitably become affected with acute inflammation of the most deadly kind, in some one or more of the great cavities of the body; scarcely one of the serous or mucous surfaces (as I have before stated) being exempt from a chance of becoming affected. This state of the system, which is often spoken of under the vague and unmeaning term of 'cachexia,' is usually clearly traceable to a morbid condition of some of the principal organs of nutrition and elimination; the kidneys, liver, or spleen, have long been either in a state of confirmed disease, amounting to disorganization of portions of their structures, or have for a lengthened period remained in a condition of such intense functional derangement, as to be continually liable to fail in their actions upon the induction of any state of unusual constitutional excitement. Large numbers of patients of this description come under the surgeon's care; and I think I shall be able to shew that it is mainly owing to such a condition of the principal viscera as I have described, and not to the severity of the mechanical injury or to any fault in the mode of operating, that the greater number of deaths from internal inflammation, after accidents and surgical operations, generally occur."*

To fortify his observations, he has referred to the Registers of the Museum of Guy's Hospital during the last fifteen years. To these results, of course important, he appeals. Our next extract will be rather long.

"One hundred and fifty-three cases of the kind were obtained from that source. Many of the subjects of these reports had undergone severe operations, or suffered from extensive accidental injuries; others had been the subjects of wounds or contusions of an apparently very trivial kind; still, the internal inflammations which destroyed life in most of the latter cases were generally as severe as those which proved fatal in the former instances, and frequently more so. In these 153 cases, death took place from—

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* "It is of course undeniable, that, in certain situations, individuals who have previously enjoyed vigorous health die in great numbers in consequence of operations; but in such instances, the fatal results are usually attributable to some unfavourable circumstances in the locality, or to the prevailing state of the atmosphere; and the fatal symptoms take on a nearly uniform character in every case. Thus, in some instances, tetanus has swept off large numbers of the wounded after general actions; in others, a form of low irritative fever has thinned the wards of military hospitals; and more than once, during the late war, it was found that in certain ships, all those who were the subjects of wounds of any description became liable to hospital gangrene. But in the cases under consideration, the causes of death, although undoubtedly subject to be accelerated by bad air, confinement, &c., are evidently not mainly dependent upon such influences; as they may always be traced to a particular state of each individual's constitution which must have existed previously to his becoming the subject of accident or operation.

Inflammation of secreting surfaces or internal organs (excluding the kidneys, liver, and spleen) in	134
In the remaining 19, the patients died from other causes; such as tetanus, sloughing, hæmorrhage, suppuration, gangrene, erysipelas, diarrhœa, and the total deficiency of reparative action in the wound: and in one of these cases the precise cause of death could not be discovered	19
	153

"In but a small proportion of the above 134 cases (in which the injuries or operations were followed by the occurrence of fatal internal lesions) were the inflammatory affections found to be confined to a single organ or secreting surface; but it was generally noticed that several important parts, and these often at a considerable distance from each other and from the seat of the primary injury, had become equally involved.*

"The following is a list of the various recent inflammatory lesions which were found to have occurred in the above 134 cases:—†

Acute disease of the substance of the lungs, appearing in the form of inflammatory œdema, red or gray hepatization, abscess, or gangrene, was noticed in	47 cases
Bronchitis alone	2 "
Pleuritis	35 "
Laryngitis and diptheritis	2 "
Meningitis	27 "
Inflammation, softening or abscess of the brain	9 "
Pericarditis	14 "
Peritonitis	52 "
Arteritis and aortitis	4 "
Phlebitis	3 "
Inflammation of various portions of the intestinal canal (excluding cases of hernia)	9 "

* "It may here be inquired, were not the inflammatory attacks, in some of these cases, the necessary results of the injuries which the patients had received? In a certain proportion, this may have been the case. In about thirteen of the above instances, the nature of the injuries was such, that it was evident the patients could have no fair chance of recovery: in the whole of the others it appeared that there was nothing to render the patients' restoration impossible, had not severe inflammation or some other unfavourable change intervened. It is not usually to be supposed, in cases of simple fracture of the skull, fracture of the ribs, and operations of hernia, that arachnitis, general pleurisy, and peritonitis, will necessarily follow: these are results which must commonly be referred to some error in the patient's constitution. Again, in given cases of laceration of the brain, and wound of an intestine, the injuries may in themselves be necessarily mortal; but where, after the patients' deaths, pneumonia is found to have been set up in the first case, and pleurisy in the second, we have just grounds for inquiring whether some previous fault in the constitution has not caused these lesions to be superadded to those which would naturally result as the immediate local effects of the injuries."

† "It will be observed, that the figures in this table merely denote the number of times particular inflammations were found to have occurred, and have no reference to the total number of cases. Thus phlebitis is stated to have appeared in three cases, and arteritis in four; but there were, altogether, only six cases of vascular disease; in three of which there was arteritis, in two phlebitis, and in one arteritis and phlebitis combined."

Suppuration in the substance of the Psoæ muscles	2	cases
Acute purulent synovitis	1	„
Inflammation of the tunica vaginalis	1	„
Cystitis	8	„
With regard to the state of the kidneys, liver, and spleen, I found that		
The kidneys were observed to be in a state of marked disease, either presenting remarkable congestion, softening, mottling, or the granular or cystiform alterations in	72	cases
The appearances of the kidneys were not mentioned (usually from the autopsy having been only partial) in	44	„
These organs were stated to be without any apparent disease in	26	„
The condition of the kidneys was doubtful in	11	„
	153	„

"Of the above cases, in which the kidneys were either not examined, found healthy, or considered in a doubtful state, there was marked disease of the liver or spleen, or of both these organs, in 21 cases—giving a total of 93 cases, in which one or more of these important organs was found in a state of lesion.*

"It was observed, that of the 134 cases in which the patients died of internal inflammations, there was also superadded marked disease of the kidneys, liver, or spleen, or of all these organs combined, in 90.†

"In a rather large proportion of these cases, the disease of the liver, spleen and kidneys had evidently existed for a very considerable time previous to the patient's receiving the wounds or injuries which became the apparent primary causes of death: but in very many (and this was especially observable in the renal cases) the changes were evidently of so recent a nature, as to render it probable that almost immediately after the operations or accidents, either visceral disease had been excited from a latent to an active condition, or that a state of acute congestion had suddenly been established in organs which had hitherto been suffering merely from chronic degeneration."

One of Dr. C.'s principal objects in submitting these remarks to the profession has been, to direct attention to the frequency of renal disease in those who perish from the secondary effects of operations or injuries.

We will not go into our author's reasoning upon the matter. The fact, *if* a fact, finds much of its own explanation. The thing is, to test the fact's reality, and that can only be done by actual observations in the dead house. For our own parts, having paid some attention to the subject, we are inclined to believe that Dr. Chevers overrates the prevalence and importance of visceral disease as a cause of these secondary affections. We are, by no means, disposed to deny the influence which such disease would exert, nor its occasional existence. But, of its frequency to the extent contended for by Dr. Chevers, we repeat that we have our doubts.

For our own parts we believe that, independently of internal and constitutional causes, the nature of the local mischief exerts an important influence. If that is

* "From the character of the symptoms and the nature of the inflammatory lesions of which many of the patients died, I am convinced that renal disease would have been discovered in a considerable number of those cases in which the state of the kidneys was not observed, had those organs been examined after death."

† "While engaged in taking notes of the above cases, from the Post-mortem Registers, I met with the following observation by Dr. Hodgkin, appended to the case of a man who sunk after lithotomy, about fourteen years ago, and in whom mottling of the kidneys was discovered after death:—'This condition of the kidneys was also noticed in another patient who died after the operation of lithotomy; and in others who have sunk after operations and injuries.'"

of such a nature, that matter formed cannot get free exit, secondary inflammations and depositions are common—if it is capable of being evacuated freely, they are comparatively rare. We shall return to this subject more fully hereafter.

Dr. Chevers alludes to the tendency to secondary hæmorrhage after operations in patients who labour under renal disease. He also gives some further examples of the manner in which renal disease gives rise to fatal symptoms in surgical cases.

"Mottled kidney is a very frequent attendant upon old strictures of the urethra. Persons thus affected are liable to be seized with shivering, vomiting, a quick pulse, and an anxious expression of countenance, but often without much localized pain; and to die with peritonitis or inflammations of other serous membranes, cystitis, and often with suppuration below the peritoneum at the base of the bladder, sometimes following the course of the ureter, and occupying the cellular tissue surrounding the kidney.

"Such individuals are also apt to be suddenly attacked with inflammatory œdema of the lungs and cerebral effusions, ending in coma and death.

"As, in cases of this description, the above symptoms not unfrequently occur as the results of the simple introduction of a bougie or sound, it becomes of importance to ascertain, if possible, the state of the urine in every case of stricture, previously to having recourse to the use of instruments for its treatment.

"Adult patients suffering from stone in the bladder are often the subjects of an active form of Bright's disease. Where this is the case, the operation of lithotomy seldom fails to be rapidly followed by fatal inflammations of serous and other strictures in various parts of the body; and, as I have already mentioned, there is in such cases considerable tendency to the occurrence of secondary hæmorrhage.*

"Syphilitic patients are liable to be unexpectedly attacked with œdema glottidis, purulent inflammation of the larynx and diptheritis, or with rapidly-destructive forms of pleurisy, pneumonia, and peritonitis. It is generally found that the individuals who are thus destroyed have long been of intemperate habits, have suffered from the abuse of mercury, and become the subjects of mottling or granular disease of the kidneys.

"Persons suffering from asthenic anthrax are apt to become affected with acute pleurisy and other internal inflammations; the effused fluids occasionally taking on a sanguinolent aspect. I have found that patients who have died in this manner have been the subjects of marked renal affections, similar to those noticed above.

"Other patients, while under treatment for various kinds of surgical diseases, not unfrequently die from the effects of acute inflammatory attacks, ascribable to degeneration of the kidneys and of the other solid abdominal viscera.

"From facts already dwelt upon, with regard to the effects of wounds upon patients suffering from the different stages of Bright's disease, it becomes a point of extreme importance to be borne in mind, in a medico-legal point of view, that an injury, in itself of a most trivial kind, is liable to be followed by fatal results, should the subject of it be suffering at the time from either acute congestion, mottling, or granular degeneration of the kidneys."

Most of the preceding statements are, we believe, not unfamiliar to experienced surgeons, and the morbific influence of renal disease is both extensive and indisputable. Whether it operates quite so universally as Dr. Chevers supposes may probably not be so certain.

Dr. Chevers urges what cannot but be considered a judicious recommendation —that every patient, on entering the surgical wards of a hospital, should have

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* "Mr. Key, I am informed, observes, in his Lectures, that he has scarcely ever seen a fatal case of lithotomy in which there was not discovered organic disease of some of the abdominal viscera, and more especially of the kidneys."

the condition of his urine tested. To establish the practical value of the advice, he urges the following sound considerations :—

"It is to be feared that the more confirmed forms of renal disease never undergo a complete and permanent cure ; but it cannot be doubted, that during the earlier stages of the affection, while the glands are still merely in a state of great vascular turgescence (a period, by the-bye, at which I believe inflammations of the serious membranes to be especially liable to occur,) the disease is certainly amenable to remedies ; and although, where there is reason to suppose that the kidneys have undergone a permanent structural change, every injury is attended with considerable risk to the patient, it is well proved that, even then, the disease of these organs may be rendered passive and kept down, the urine being, for a time at least, restored to its natural character. Under such circumstances, operations may not be productive of such certain danger. I have seen cases of patients suffering from stone at Guy's Hospital, where, some weeks previous to the operation, the urine had been albuminous ; but this condition having yielded to remedies, lithotomy was performed, and the patients recovered without any marked bad symptoms. There can scarcely be a doubt that in these cases an operation undertaken while the kidneys were in an irritable state would have been unavoidably fatal."

He would, in all cases, then, test the urine, and examine the condition of the liver and spleen. It sometimes happens that decided renal disease is not attended with albumen in the urine. But the surgeon, if he has tested that, has done his best to arrive at the truth, and no blame can attach to him. Dr. Chever adds ;—

"Even where the urine has been found healthy immediately previous to the operation, I believe that there is still great necessity for testing its condition, at intervals of a few hours, during a considerable time after the patient has been removed from the operating-table to his ward ; for the extremely recent appearance of the morbid changes observable in the kidneys of many of those who have sunk from internal inflammations after injuries has (as I have already stated) led me to believe that these organs often remain with merely a tendency to derangement until the disturbance consequent upon the operation causes them suddenly to take on a state of active disease."

IV. Observations on the Structure, Functions, and Diseases of the Coronary Arteries of the Heart. By Norman Chevers, M. D.

After a description of some peculiarities in the structure, and some observations on the functions of the coronary arteries, for which we must refer to the original, Dr. Chevers offers an account of their diseases.

They are such as affect the aorta, from which they generally extend in a greater or a less degree. But the coronary arteries seem to have also some morbid changes more peculiar to themselves.

They may partake in nearly all the changes resulting from acute aortitis, and have been found obstructed by recent concretions of plastic lymph. But they also present a frequent redness from staining and transudation.

The orifices of the coronary arteries are peculiarly liable to cartilaginous or ossific deposits. It is not rare to find deposits of this nature partially surrounding and obstructing these openings, and occasionally encircling them with a tumid ring, which nearly, and in some cases entirely, precludes the entrance of blood.

"But the mouths of both these vessels are not usually found equally narrowed ; and where only one of them is affected, it is not certain that any very serious consequences are produced ; as the communication by anastomosis between the right and left appears to be sufficiently free to enable the sound vessel to supply all the branches below the impediment in the diseased one ; and closure of one vessel has been noticed to be followed by dilatation of the other. In the adult, their interiors are seldom entirely free from minute opacities, which are usually

arranged in striæ corresponding to the course of the longitudinal fibres of the subserous laminæ between which they are situated. In advanced life, it is common to find bony deposits scattered at intervals throughout their whole extent; some of these frequently attain a very large size, appearing as narrow elongated masses, lying parallel to the axes of these vessels; rarely surrounding the canals with complete calcareous rings, as do the old deposits of the smaller arteries of the extremities, but often attaining a bulk sufficient either to close the vessels completely or to leave a very narrow and irregular passage for the blood; while the less rigid portions of the tubes become greatly dilated, and in this state occasionally suffer rupture. Except in extreme cases, this condition of the coronaries is not invariably followed by much atrophy of the muscular substance of the heart; for as the minuter ramifications of the arteries generally continue comparatively free from disease, a sufficient quantity of blood permeates the strictured vessels (providing the circulation remain tranquil) to maintain the nourishment of the organ. The coincidence of this state of the coronary arteries with the symptoms of angina has long been observed; and it appears probable that the sudden attacks of syncope, to which aged persons are frequently liable, are, in a great proportion of cases, attributable to the same cause.

Large atheromatous collections between the layers of the sub-serous tissue are not frequent. But they may occasionally be pressed through ulcerated openings in the internal membrane of the vessels, and have been mistaken for pus.

The coronary arteries are liable to permanent dilatation, either throughout their whole extent, or in varicose bulgings, like those of the superficial arteries of the scalp.

"Their tortuosity is also greatly increased, and occasionally (the surrounding adeps becoming absorbed) they project so greatly from the surface of the heart as to appear to be attached to that organ only by a fold of pericardium. Occasionally, this dilatation is followed by rupture of one of the arteries; of which fatal result examples may be met with in almost every collection of morbid anatomy; but the occurrence of that accident generally appears to be long delayed by the increased strength which the sub-serous laminæ acquire during the time in which the vessel is undergoing the process of dilatation; and it is probable that, in most of the cases where this accident takes place, it is immediately dependent either upon inflammatory softening or ulceration of the inner tunics of the vessel."

Dr. Chevers goes on to observe:

"I believe one of the most frequent causes of dilatation of coronary arteries to be, the deposition of a large quantity of fat within the interstices of the muscular tissue of the heart, which appears to produce here (as a similar process clearly does in other parts of the body) a diminution in the capacity of all the minuter capillaries distributed within the organ; and hence the main trunks, although sufficiently furnished with blood, become incapable either of transmitting their contents with freedom, or of supplying the heart with its proper nutriment; and accordingly, the large branches of these arteries suffer marked dilatation, while the cardiac muscular tissue becomes pale, softened, and atrophied: and hence arises one of the most frequent causes of rupture of the heart. It has become a subject of remark, that in the cases where death occurs from sudden rupture of one of the heart's cavities, the whole of the surface and furrows of the organ will generally be found loaded with adipose tissue; and (judging from a considerable number of specimens in the various metropolitan museums) we may also add, with the caronary arteries considerably dilated. It may not be altogether unimportant to bear the above facts in mind, with regard to the application of remedial measures in these cases. It is by no means unusual to find elderly persons of obese habits of body complaining of violent palpitation, with sensations of impending suffocation, after any sudden exertion or emotion, the application of cold to the surface of the body, or, in fact, any action which tends

to determine an unusual supply of blood to the heart. In these persons, the pulse is usually weak, while percussion and auscultation shew that their hearts, although large, act feebly; the sounds being indistinct, but free from irregularity or other abnormal character. This train of symptoms is probably often dependent upon an advanced degree of that condition of the heart which I have last described; and I have little doubt that the difficulty of breathing, which nearly all extremely corpulent persons experience upon unwonted exertion, is mainly attributable to less degrees of the same changes. Acting upon this course of reasoning, I have found that the adoption of a plan of treatment calculated at once to procure absorption of a portion of the superfluous fat of these patients, and to diminish the quantity of their circulating fluids, has been followed by an acquisition of increased cardiac power, as evidenced by a stronger pulse and an entire cessation of the suffocative attacks during very long intervals."

The latter recommendations deserve attention, and correspond with what we have ourselves observed.

V. A Case of Glanders in the Human Subject. By H.M. Hughes, M.D.

Dr. Hughes observes that patients are not unfrequently admitted into the hospital who are supposed to have been infected or inoculated by poison, derived from the lower animals. The symptoms and the progress of the case are too various to admit of a faithful general history being given of them. The following sketch appears to us to be graphic and true.

"One feature is, however, common to them all. The patients have been all more or less directly or indirectly, exposed to the liability of inoculation by putrid or diseased animal matter. One of them a short time before his illness, was engaged in moving some barrels of salt meat, the odour of which proved that the antiseptic processes adopted had not been effective in preventing partial putrefaction; others have been occupied as tanners, knackers, butchers, horse-keepers, cab-drivers, or coachmen; or have been employed in packing or handling imported skins, or imperfectly cured animal provisions.

"These patients have fever of considerable but very variable intensity, often remittent, frequently irregularly intermittent, and constantly accompanied with a moist state of the skin. They almost always complain of severe pains in the back, limbs, and joints; and often believe and represent themselves to be suffering from rheumatism. The complaint has not, however, the general aspect of that affection. The joints are not, in the first instance, swollen, red, and tender; the tongue has not the loaded, white, moist, and flannel-like appearance; and the skin, though moist, is not covered with a copious perspiration of the peculiarly sour odour common in that complaint. Pain of the head, and especially of the forehead, is often troublesome; delirium exists at night; the tongue is somewhat dry and red, at least at the tip and edges: the conjunctiva is injected; and the whole of the mucous membranes congested and irritable—symptoms which lead to the probable supposition that the disease is simple continued fever. But the absence of some of its ordinary accompaniments causes doubts to arise in the mind of the attendant; the skin is not constantly dry, pungent and hot, but is at one time hot, and at another moist, greasy, and of natural temperature; there are no maculæ, and no petechiæ; and though the face is flushed, the countenance has not the heavy, stupid, half-drunken, 'puzzled' expression of common fever. While the physician is perhaps still undecided as to the origin and nature of the malady, a local swelling occurs upon the trunk, or more commonly about one or more of the joints; or erysipelas appears upon the forehead, cheek, or neck. The tumour slowly suppurates, or the erysipelas is followed by an ill-defined abscess of the cellular membrane. The parts heal, and the patient for a time appears to improve in health and strength; when tenderness is felt in another

part. and one or more tumours are again discovered, slowly suppurate, and discharge their unhealthy contents. The parts heal, and the patient is again temporarily restored; his improvement is but brief; his quiet is but of short duration; other tumours again and again appear; the process is repeated, till his spirit is broken, his energy lost, and his constitutional power destroyed. The tumours have usually no definite arrangement, and certainly are not confined to the course of the veins and absorbents; they are, on the contrary, seen at the same time, or in succession, upon the right arm and left leg, the axilla of one side and the groin of the other, the instep, and the sub-maxillary space. Most commonly the poor patient, already nearly exhausted by the repeated drains upon his system, caused by the discharge from the abscesses, is ultimately carried off by an attack of diarrhœa. More rarely, an individual, after a long and tedious convalescence, slowly acquires strength, and is at length discharged; cured indeed of his complaint, but in a condition so shattered as to be unable for some time to resume his ordinary occupation."

These cases, as Dr. Hughes observes, bear a strong resemblance to those which have been reported as instances of chronic farcy; but their common origin has not been proved.

Only two cases of well-marked acute glanders have been admitted into the Hospital. One occurred in Dr. Hughes's absence, and some particulars of it were communicated to the Medical Gazette. The second case is now narrated.

Case.—"Michael Ginivan, aged 40, a horse-killer, was flaying the leg of a horse recently killed, when his knife slipped while his attention was temporarily withdrawn, and inflicted a wound in the fore-arm of the *left* side. On the next day, a cord-like enlargement made its appearance, leading from near the wound to a painful swelling on the inner border of the biceps muscle, just above the elbow." He went to a surgeon, who dressed the wound and gave him some aperient. He stayed at home and thought little of the matter for two or three weeks, "when he began to suffer pains in different parts of his body resembling those of rheumatism, and painful swellings arose in his *right* arm and leg.—Mr. Comley seeing him in the yard, to which he had gone to see his master, and struck by his peculiar appearance, gave him a Letter for the Eastern Dispensary; and took him under his own care, September 23, 1842, the twenty-fourth day after the accident.—He was robust, muscular, and apparently of good constitution; and for the last ten months has adopted the 'total-abstinence principles,' though he had previously been in the habit of drinking to excess. The countenance was anxious and depressed, but 'irritable, as if labouring under the effects of poison;' the eyes sunken; conjunctiva slightly jaundiced; pupils dull and sluggish; intellect clear; tongue flabby; bowels regular, pulse 60, with little power; he had no appetite; the respiration was not disturbed. The wound in the fore-arm was superficial, with an inflamed surface, and hardened base; two or three hardened lymphatic vessels led from the wound to a large and pointed tumour on the inner edge of the biceps, above the internal condyle. There existed also a deep and fistulous wound over the first phalanx of the little finger. The glands in the axilla were not affected. A tumour similar to that on the *left* arm existed on the centre of the *right* fore arm, and also on the *right* thigh; they were all acutely tender to the touch.—Ordered, a nutricious diet, with a pint of porter and six ounces of wine daily; to take an alterative powder of rhubarb and calomel every other night, and an aperient draught the following morning; decoction of bark ℥jss, and carbonate of ammonia gr. v. three times a day."

25th day. Pains in the whole body—unable to walk—pulse 80, soft.

After this he slowly improved till the 35th day, when he was not so well. "The pain of the right leg was very severe, and prevented both motion and sleep; he had also a pain in the back, which was referred to the right kidney; the urine was not examined; he had some cough, unattended with expectoration,

but accompanied with some crepitating rattles in the posterior and inferior portion of the *right* side of the chest; the countenance was again anxious; the pulse 80, full and sharp; the skin moist; the bowels regular.—Ordered to discontinue the wine; to repeat his alterative and aperient medicine; and to take sesquicarbonate of soda gr. x. tinct. of orange 3j., and compound infusion of gentian ℥j. three times a day."

37th day. Cough has subsided—looks better. To resume wine.

41st day. Not so well. Acute pain on the inner side of the *left* knee. Eight leeches and poppy fomentations. P.

42d day. Small tumours on the left leg—those of arms more swollen and painful.

44th day. Pains of entire body—tongue red in centre, brown-furred at edges—countenance anxious. To take a pill of hydrochlorate of morphia gr. ss. and blue pill gr. ij. every night, and decoction of bark ℥j. with compound spirits of ammonia 3ss. three times a day.

46th day. Symptoms typhoid—leg and knee much swollen and acutely painful.

47th day. Admitted into Guy's Hospital. "There existed a considerable swelling about the *right* knee, which was rather red, painful, and tender under pressure, but appeared to contain no defined collection of fluid. Upon different parts of his arms and legs he had six or eight tumours, oval, soft, and about the size of half a pigeon's egg; some of which only were tender, but all evidently fluctuated under pressure, and over all the skin itself was of the natural colour and appearance; the tongue was clean and moist; the pulse 84, of moderate power; the respiration unaffected. Ordered, sesquicarbonate of ammonia gr. v. decoction of bark ℥iss. every six hours.—A draught, with tinct. of opium, ♏xx, in camphor mixture, at bed-time.—Two pints of porter and ℥iv. of wine, daily; with good beef-tea and arrow-root for food; and fomentations to the knee."

48th day. Some wandering delirium in the night. Knee less swollen and tender, slight increase in number of small subcutaneous tumours.

49th day. Pulse increased in frequency, diminished in power. "The *left* eye was closed by a purplish-red tumefaction of the eyelids: the tongue was rather dry, and at the tip and edges more red than natural: the bowels had been opened twice: the knee was much less swollen; and the tenderness about it was now trifling; but the small tumours had increased considerably in number. Several large flat elevations of the cuticle, containing an opaque yellow fluid intermixed with some which were smaller and acuminated, now existed, thinly scattered over the extremities."

"Sesquicarbonate of ammonia gr. v. Compound tincture of bark 3j. Wine of opium ♏v. Infusion of serpentary ℥iss. every six hours.—The night-draught to be repeated, with tincture of opium ♏xxx. To continue the porter, and to have ℥iv. of brandy instead of wine."

50th day. Somnolency. "The *left* eyelids were more swollen, and the left side of the face appeared œdematous. The *right* eyelids were also swollen, though to a less extent. The *right* knee had assumed its natural size and appearance; but the pustules had now appeared upon the face and trunk, and their number had very much increased upon the extremities. When more advanced, they were rounded, plump, yellow, and about the size of half a large split-pea: those which had recently appeared were smaller and rather pointed, containing yellowish opaque fluid, like some forms of varicella. Four only existed on the face; one of which was on the forehead, one on the left eyelid, one on the top of the nose, and one on the chin. When the right eyelid was raised, there exuded a little clear colourless fluid. From the nose spontaneously flowed a scanty, reddish-brown, and rather viscid secretion, which appeared to obstruct the respiration. No enlargement of the absorbent glands of the axilla, groin, under the jaw, or of other parts, could be discovered. The skin was now perspiring very freely, and the pulse was very feeble and frequent. The state of the pupils could not be ascertained in consequence of the swelling of the eyelids.

His external appearance now much resembled that of the patient of whom the model is preserved in the Museum, though the characters of the complaint were generally less strongly marked. Ordered to repeat the mixture every four hours without the opium: to have ℥viij. of brandy: and to continue his porter, beef-tea, &c.

"He continued in exactly the same state, excepting that he was very thirsty, and drank freely till 9 o'clock P. M., when he had a little rattling in his throat, suddenly became pale, and ceased to breathe. It appeared probable that he was sensible to the last; as, though he could not be understood, he tried to talk, when his wife spoke to him in Irish. Permission was not granted to inspect the body, which was speedily removed by the friends."

It may be observed, in reference to the cause of these symptoms, that a horse affected with "black farcy" had been admitted into the yard the day before the accident, and glandered horses were frequently slaughtered at the establishment.

Dr. Hughes concludes:—

"The history of this person's disease before his admission into the hospital bears a striking resemblance (excepting the formation of abscesses) to those referred to at the commencement of this paper. On the day of his death, his external appearance was very similar to that of the person formerly modelled in the Museum. It is to be remarked, that the small tumours of the skin appeared in numbers only during the last few days of the disorder, and that the pustules arose only three days, at most, before that event: it is also remarkable, that at the same time the swelling near the knee, which obviously contained fluid, subsided. The treatment was adopted with the view of keeping up the power of the patient while the poison was thrown off from the system, or 'the disease wore itself out;' but when the complaint assumed an acute form, it had little, if any, effect. Hitherto all the cases of the acute disease have, I believe, proved fatal. Is it not time, and would it not be expedient and proper, to adopt other means of cure; such as the free administration of mercury, and giving a free and early exit to all accumulations of matter?"

VI. OBSERVATIONS ON THE BLOOD, WITH REFERENCE TO ITS PECULIAR CONDITIONS IN THE MORBUS BRIGHTII. BY GEORGE OWEN REES, M.D. F.R.S. Physician to the Pentonville New Model Prison.

It appears that Dr. Rees had many opportunities, during the last summer, for investigating the condition of the blood in the *Morbus Brightii*. Of those opportunities he has availed himself.

Prior to entering on the morbid condition of that fluid, he thinks it necessary for comparison's sake, to premise the result of a few experiments on the anatomy and mechanical relations of the blood-corpuscle.

The following remark is not very flattering to the microscope or microscopists—worse than that, it is a true one.

"It is hoped that the experiments about to be described may shew the necessity for a correct knowledge of physical structure on the part of those who are occupied in the chemical examination of the blood; and, also, that it may appear how we occasionally possess means of proving on large masses the views to which we have been led by microscopic examination—a method of inquiry which, valuable as it certainly is, must always be received with the distrust naturally felt towards a means of investigation so tempting to the imagination, and which, it is to be feared, has already been productive of much mischief in the hands of the ingenious and unscrupulous."

Our present limits scarcely justify us in entering on the microscopic examination of the blood in health. We must, therefore, pass to the state of that fluid in renal disease.

The following appear to be the principal features to which attention should be drawn:—1. The excessive quantity of water in the blood. 2. The existence in the blood of one of the ingredients of the urine. 3. The existence of the same ingredient of the urine in the milk, and also in the fluids effused into various serous cavities. 4. The absence or deficiency in the urine of one or more of the natural ingredients of the excretion. 5. The general watery condition of the urine. 6. The existence of albumen in the urine.

Dr. Rees observes:—

"When considering the part taken by the blood in producing the Morbus Brightii, it must not be too rapidly concluded that those changes which are observed in more advanced stages of the disease are identical in kind, and differing only in degree from those occurring at the commencement of a severe and fatal case; or that they are the cause of the symptoms, terminating in perfect recovery, which we so often observe in mild cases of anasarca with coagulable urine following scarlet-fever. The diseased conditions of the blood noticed in the Table may, however, I think, well be considered the cause of the train of secondary symptoms attendant on the Morbus Brightii: and the first morbid condition induced may be (as has been rendered more than probable by the late ingenious researches of M. Robinson) simply a congested state of the kidney—a mechanical derangement of circulation—giving rise to a filtration of the albuminous matters of the blood into the urine; a drain on the system which, by impoverishing the vital fluid, may, in its turn, make the blood a cause of further symptoms, such as would never have developed themselves had not the primary disease been manifest. All, indeed, that we know of the history of this degeneration of the kidney, the mild character of some of the cases, and the facility with which the disease, as following scarlatina, admits of cure—tends to show, that in the commencement the blood may be perfectly healthy, and the albumen in the urine the result of congestion by blood in its normal state.

"There is, however, a fact in the history of this affection which does not render it altogether improbable that the presence of an excess of water in the blood may, in some cases at least, assist in bringing about the effusion of serum into the urine. I allude to the frequency of a dry skin, observed in some early cases. The probability that such a state of the cutaneous surface acts as a cause is considerably increased by the tendency to this kind of dropsy after the cutaneous surface has been involved by an attack of scarlatina, which produces a form of Morbus Brightii, for the most part easily admitting of cure. The difficulties which must necessarily occur in freeing the blood of water when the action of the skin is lessened or entirely stopped must be considered as very great, when we remember the large quantities of fluid daily given off from the cutaneous surface, and the small excess only in the quantity of urine characterising any form of Morbus Brightii;—the greater number of cases, indeed, passing less than the natural quantity."

Yet, he does not absolutely contend that congestion alone is incapable of producing coagulable urine; though he thinks that the tendency to it will be increased by dilatation of the blood.

"The secondary symptoms of the Morbus Brightii—such as effusion into the large serous cavities or the ventricles of the brain, general cellular effusion, and the peculiar anæmic appearance which, even when no swelling of the face exists, is frequently so characteristic as to attract the practised eye—are easily explicable as results, when once we are acquainted with the watery state of the blood, and the physiological conditions necessary to preserve the integrity of the blood-corpuscle. The obvious mechanical assistance which an excess of water must afford for the production of general effusion needs no comment; but it may be a matter of difficulty to some, to explain how it is that the blood loses its red colouring matter; and which, to be clearly understood, requires an insight into the more minute changes occurring in the fluid, as a result of its aqueous con-

dition. I have before shewn, that if the chyle does not accommodate itself in relative specific gravity to the blood, the necessary endosmodic actions cannot take place between the two fluids; and we may consequently expect difficulty in the production and growth of the red corpuscles, inasmuch as the iron cannot be supplied for the formation of colouring matter, the ferruginous serum of the chyle no longer entering through the membrane of the blood-corpuscle in virtue of its less specific gravity: and I think it may be maintained as the correct view, that this is really the cause of that great diminution in the porportion of colouring matter observed in the blood of patients affected with the advanced stage of the Morbus Brightii. This diminution in the proportion of red corpuscles does not occur in early cases of the disease, however confirmed in character: an example of which may be seen by referring to the history of George Moore, 14 Job Ward, a mild case, probably admitting of permanent cure, in which the blood contained more than the normal proportion of fibrin and corpuscles, the albumen being very deficient, the serum light, and the water of the blood in about its natural quantity. We here see the first effects of the disease —the blood becoming deprived of its albuminous ingredients; a condition which, if it continue, will produce the next change; viz. a deterioration in the specific gravity of the contents of the corpuscle, owing to the liquor sanguinis becoming lighter, and endosmosing that structure: this state again soon succeeded by a lessening of the number of red corpuscles, attributable to the requisite actions no longer taking place on the part of the chyle, in the manner described in a former part of this Paper. The occurrence of inflammation in this disease, as will be seen by the analysis of the blood in the case of Holywell, produces the usual increase in the quantity of fibrin in the blood: this, however, did not happen to any considerable degree in the case of Charles Scott."

The existence of urea in the blood and effusions, and in the milk of a patient, has been satisfactorily proved. To obtain urea from milk, the following appears to Dr. Rees the best process:—the milk must be evaporated to dryness; and then several times digested with æther which will extract the whole of the fatty matters, together with the urea; the latter being easily separable by heating the dry ethereal extract with water, and stirring it well during the digestion. After this process the urea exists dissolved in the water, which may be poured off from under the fatty matter, the latter having caked above the liquor on cooling.

Dr. Rees thinks that, as regards the urine, the deficiency of urea, and occasional deficiency or absence of lithic acid, its watery condition, and the presence of albumen, the two former states may in all probability be attributed to the derangement of the kidney alone; and the two latter, in some measure, to the condition of the blood. He does not know that the total absence of lithic acid from the urine has been before observed.

"Albuminous urine, when viewed under the microscope, exhibits granules and corpuscles of varying form and size; the larger of which might be mistaken for the pus-globule by careless, or inexperienced observers. The true source, however, of these bodies is, in all probability, the serum of the blood, which I find deposits analogous granulus and corpuscles when diluted by a liquor of light specific gravity; which may easily be proved by pouring distilled water on serum, and submitting to the microscope the precipitate which collects after a few hours have elapsed. In other respects, coagulable urine presents the ordinary appearances under the microscope; the solid ingredients or crystallizable products exhibiting, when present, their usual characteristics. Some specimens shew very well the large form of granulated mucous globule known as the secretion of the prostate."

VII. Account of Observations made under the superintendence of Dr. Bright, on Patients whose Urine was Albuminous: By George Hilaro Barlow, M.A., and M.D. With a Chemical Examination of the Blood and Secretions. By G. O. Rees, M.D.

Dr. Bright observes:—

"The few following pages will be found to contain the record of the first experiment which, as far as I know, has yet been made in this country to turn the ample resources of an hospital to the investigation of a particular disease, by bringing the patients labouring under it into one ward, properly arranged for observation. I fear that the attempt has been less effective than it might have been, and than, I trust, others will hereafter prove; but if this is the case, the imperfection must fairly be ascribed to my want, not so much of zeal as of time, for carrying out, in its fullest extent, a most interesting experiment.

"The Clinical Wards of Guy's Hospital seemed to afford a most appropriate opportunity for the object in view: and I applied to the Treasurer of Guy's for permission to occupy them after the Clinical Session had concluded, in May. Mr. Harrison entered heartily into the plan, and offered every facility. Accordingly, it was determined, that from May to October I should be allowed the full use of the Male and Female Clinical Wards; and all my colleagues readily granted permission to select any cases from the other wards which I might consider likely to promote the object.

"Dr. Barlow, with the greatest readiness, undertook to make up for my neglects; whilst Dr. Rees took charge of the chemical part of the inquiries: and it is entirely to these two that our Reports are indebted for the connected account of proceedings which the present communication contains.

"Our establishment then consisted of a female ward with eighteen beds; a male ward with twenty-four beds; a room between the two wards for the meeting of the physicians and pupils, and for the registry of the cases; and a small laboratory communicating with the middle room, fitted up and decorated entirely to our purpose.

"Dr. Barlow and myself were in charge of the medical treatment of the cases, with the assistance of Dr. J. T. Francis, Mr. J. H. Browne, and Mr. Allen Williams, as Clinical Clerks, whose duty it was to take daily reports.

"Dr. Rees had charge of the laboratory, in which he was assisted by Mr. Pearce; and, thus prepared, we began our operations, and proceeded pretty steadily with them.

"The objects which we proposed to ourselves were, to examine as far as it was possible, the changes which accompanied the secretion of albuminous urine in the various functions and secretions of the body; whilst at the same time we registered the various circumstances connected with the origin, progress, and treatment of the disease—a disease than which there is certainly none which offers a more extended field for careful and well-directed observation."

The Paper contains the particulars of 34 cases, an elaborate table, and several plates. It would be quite inconsistent with our limits or plan to go into such details on a complaint on which so much is daily said. The utmost we can do is to notice some facts or inferences that appear of interest.

After relating seven cases, Dr. Bright makes some remarks. He first touches on the cerebral complication of this disease.

"The two cases, in which the complication consisted of affections of the encephalon, illustrate forcibly the danger of the sudden invasion of cerebral symptoms; which always exist where albumen is present in the urine, in any quantity, however small, accompanied with a diminution in the specific gravity of that secretion; a danger which is not diminished by the absence or the subsidence of any dropsical swelling: for, in the former case, it is worthy of notice, that the quantity of albumen

in the urine was but small throughout, and that the dropsical effusion had nearly subsided before the more alarming symptoms manifested themselves; and in the second case (that of Henry Stanley,) the anasaraca was much diminished, and the urine improved in every respect, except its specific gravity, just at the time that the fatal attack occurred. Indeed, I think that, from a careful observation of no very limited number of cases of this disease, I may pretty confidently affirm that in those cases of albuminous urine, in which there is little or no dropsical swelling, with but a moderate or even scanty deposit of albumen, the skin being at the same time moist and perspirable, but the urine defective in its solid contents—as evinced by its light specific gravity, and the absence of urinous odour upon the application of heat or nitric acid—there is more especial danger of the sudden invasion of disease in the brain or its membranes. In one or two very well marked cases of this kind, almost the only dropsical effusion has been a sort of watery chemosis, produced, as I believe, by anasarca of the cellular membrane under the conjunctiva."

He then adverts to another and an interesting question—the relation of cardiac hypertrophy and renal disease to one another.

"The origin, however, of this hypertrophy is a matter of some difficulty, as well as of some importance, as the question has been raised—and it is certainly one deserving of grave consideration—whether, in cases of this kind, where disease of the heart co-exists with disease of the kidney, (a coincidence which is observed so often as to render it in the highest degree probable that the two lesions bear some necessary connexion with each other,) the former or the latter is to be regarded as the primary affection—whether, in fact, the renal disease is anything more than the result of congestion produced by mechanical obstruction—or whether the disease of the heart can be in any way shown to be the result of that of the kidney? Upon this question, Cases 3, 4, 5, 6, and 7, tend to throw considerable light.

"To begin, then, with Case 3;—and let us, first of all, endeavour to reconcile it with the former hypothesis. The hypertrophy of the left ventricle, then, was notable, and its injecting force must have been excessive: there is, however, much difficulty in accounting for this hypertrophy, as there was no valvular disease; unless we refer it to the morbid changes which had taken place in the arteries, and which may certainly be regarded as a real and a sufficient cause for the phenomenon: for it must be obvious that the disease of the arteries was not produced by the violence which might have been done to their lining membranes by the too-powerful ventricles; since, in the arch of the aorta, where such violence would have been the greatest, the injury was less than in the descending portion, where the force of the heart's action must have been far less.

"According to this hypothesis, then, the arterial derangement must have been the primary lesion; which, by the impediment it offered to the free passage of the blood, gave rise to hypertrophy of the left ventricle, which, in its turn, by its too-powerful injecting force, caused a congestion of the kidneys, which led to their ultimate disorganization. It need hardly be remarked, that there is a contradiction involved in the very terms of the explanation: but further than this, there is the difficulty of explaining why the kidneys should have suffered so much, whilst the liver, which is generally the first organ to be affected by disease of the heart, should have escaped; and, also, of accounting for disease of the arteries, which there is every reason to believe is a rare affection, when occurring idiopathically.

"Let us now assume, that the disease of the kidney was the primary affection: and, in so doing, we may observe that we are not met *in limine* by the same difficulty which we had to encounter on the former hypothesis; for although to assume that the kidneys are often primarily affected with this disease would be, in some measure begging the question, yet numberless analogies may be drawn from other secreting organs, to show that over-stimulation may give rise to

hyperæmia and subsequent disorganization: and that the kidneys were so stimulated in this case, is rendered highly probable, from the history of the invasion of the disease, as well as the previous habits of the patient. It is also ascertained that changes were produced in the condition both of the secretion of the kidneys and of the blood; the former being deficient in some of its natural solid contents, which were found to exist in excess in the blood; whilst the latter fluid was deficient in an important solid ingredient, which was being continually abstracted by the kidneys; so that there was a two-fold change produced in the latter fluid; namely, the presence of an irritating substance, which it is the office of the kidneys in health to remove; and also the absence of a substance, which, independently of other important purposes in the animal economy, gives to the blood a viscidity which (according to the observations of Magendie) renders it more easy of transmission through the capillary vessels. We have, then, a cause sufficient to account for the disease in the arterial tunics, whereby the circulation in the larger vessels must be impeded; as well as a further obstacle to the transmission of the blood, resulting from the change in the blood itself: both of which circumstances must have co-operated in producing the hypertrophy of the left ventricle. It cannot then, I think, be doubted, that the latter hypothesis accounts for the phenomena in this instance more readily than the former.

"The same line of reasoning, with very little alteration, applies to Cases 4 and 5: though perhaps, in the latter, there might be some suspicion of disease in the chest giving rise to venous congestion in some of the abdominal viscera, and, amongst others, in the kidneys, although not to a sufficient extent to account for the change which those organs had undergone.

"In Case 4, indeed, there had been cough and dyspnœa for some time, before any dropsical swelling manifested itself; but although it is by no means improbable, from the history of the case, that bronchitis existed, yet it is now so well ascertained that renal disease may exist without any dropsical swelling, and also that, when it does exist, it is so uncertain in its situation, that we are not justified by its absence in assuming that the kidneys were sound, or even that disease in those organs might not have existed to an extent capable of producing œdema of the lungs: whereas the copious diuresis which existed for some time previously would be sufficient to lead us to believe that the kidneys had been for a long time in a state of over-activity—a belief which is most fully confirmed by the advanced stage of disorganization in which these organs were found after death.

"In Case 5, again, we have evidence of a still greater amount of obstructive disease in the lungs and heart, though the left side of the latter organ was principally affected; so that, although there existed a cause for venous congestion in the abdominal viscera, and, amongst the rest, in the kidneys, it was not sufficient to account for the extent of degeneration which these organs had undergone.

"In Case 6, again, we have a still greater amount of obstruction to the return of the venous blood: and, with it, considerable disease of the kidney, which, however, was principally of a congestive character. But it is in Case 7 that we find the causes of venous obstruction in their fullest extent; there being great dilatation and hypertrophy of the right ventricle, owing to the impediment to the pulmonary circulation, caused by the narrowing of the left auriculo-ventricular opening on the right side of the heart: yet here the disease in the kidney was less advanced than in any of the preceding cases, but that disease was of a congestive character, and during life the urine contained a scarcely appreciable quantity of albumen.

"The five last cases, in fact, present a series in which the renal disease becomes less and less, whilst the thoracic disease becomes greater and greater: the former affection, however, assuming more of the congestive character, as we approach the close of the series.

"We are then, I think, justified in concluding, that although disease in the heart or lungs may, by the impediment which it causes to the return of blood through the veins, give rise to congestion in the kidneys, in common with other organs in the abdomen, and thereby derange their functions, and in some cases lead to their ultimate disorganization, yet, as such disease was the least in those cases where the renal disease was the most advanced, and the converse, we are not to conclude that such disease in the chest is the universal or even frequent cause of the true Renal Disease; and that we must look elsewhere for the seat of the primary lesion in this formidable malady."

This reasoning is ingenious, if not conclusive, and the subject is one that merits close attention. The remaining Cases in the Report will repay a careful perusal. We see little more to notice.

ST. GEORGE'S HOSPITAL.

REPORT OF SOME CASES OCCURRING UNDER THE CARE OF MR. HENRY JAMES JOHNSON, ASSISTANT-SURGEON TO THE HOSPITAL.

Perhaps some apology is due for obtruding on the notice of the reader cases of so desultory, if not trivial a character as the succeeding. But as life is made up of small incidents, and the most happy and successful man is he who contrives to extract pleasure and profit from them, so professional existence is mainly composed of little matters, which, managed well or ill, constitute the difference between satisfaction and discomfort, perhaps between fortune and failure.

Even in a great Metropolitan Hospital, with all its appliances for attracting to itself what is rare and severe in the mass of human maladies, the bulk of the cases are of common occurrence, and of a mild description. They therefore present those opportunities for observation, practice, and experience, best calculated to qualify the physician or the surgeon for the duties of every day. To neglect them is to neglect the very business of life; to study them, goes far towards making him master of it. It is a trite observation, that the student too frequently *does* neglect them, and the practitioner too late regrets it.

I have always been of opinion, that it is the *duty* of those who have the charge of Hospitals, to render the facts that they contain as available as possible for the whole profession. These appointments are necessarily few, and their fortunate possessors should look on them not as prizes in a lottery, given for the exclusive advantage of the drawers, but as public trusts for the public benefit. Actuated, then, by this conviction, I have felt that even ordinary cases might convey some information to those whose means of obtaining it are straightened, and tend to bring the isolated country surgeon to the level of the knowledge of the capital. For, in hospitals, new medicines can be given, new methods can be tried, to an extent not permitted by the narrow limits, and strict responsibilities of private practice.

Whatever may be thought of the performance of the task, I trust that no exception will be taken to the spirit of it. I am sensible that, at present, the execution lags sadly behind the promise, but venture to indulge the hope that something more worthy may be effected by-and-by.

The first subject to which I shall allude is the—

I. MANAGEMENT OF ULCERS OF THE LEGS.

Those who have been much about Dispensaries or Hospitals are aware both of the frequency and the obstinacy of ulcers of the lower limbs in the out-door

patients. They often tire out surgeon, dresser, and all, and week after week, and month after month, there is the same sore with the surface just as foul, or the edges just as hard as ever, to the shame and confusion of ointments of all colours and bandaging of the first order. Any treatment which has some success to boast of, and curtails the duration of these opprobia *chirurgorum*, is "a consummation devoutly to be wished for."

On first assuming the office, I was naturally inclined, "stare super antiquas vias," and to appeal to poultices, unguents, or strapping as the fit and proper things for ulcerated legs. But in spite of them, the dresser, and myself, too many of those legs grew little better, and some got even worse. It was obvious that either a happier method must be found, or else that sore legs were a nuisance not likely to be materially abated. A plan was tried by the Assistant House-Surgeon, and myself, which, on the whole, has not disappointed our anticipations, and has really effected so much benefit, as to render an ulcer of the lower limbs a hopeful sort of case. Whatever claims others may possess to the integral parts of the plan in question, I beg to make freely over to them.

I may be permitted to state that these observations are neither calculated nor intended for a copious account of the varieties or treatment of ulcers. They are hints for their management, and nothing more. But to the point.

As a general rule, subject unquestionably to many exceptions, moist applications seem to suit ulcers best—a piece of lint dipped in the liquid, whatever it may be, larger than the sore on which it is laid, and covered with a piece of fine oiled silk, larger still, is the sort of dressing employed. The lint should be changed sufficiently often, or, at all events, dipped frequently enough in the liquid, to ensure its permanent moisture. Three or four such applications in the twenty-four hours are, in most instances, sufficient. When the discharge is copious, attention to this is particularly necessary. A girl with an ulcer on the arm, of large dimensions, the consequence of a burn, allowed the lint to remain in contact with it for more than forty-eight hours. The matter had collected and became offensive, and the granulations were absorbed, and the sore much deepened.

In most cases, it is well to employ a bandage. If the patient maintains the horizontal posture, this is not so requisite. The bandage should, in general, be applied lightly, and may, in some instances, be advantageously kept wet.

It is foreign to my purpose to inquire into the manner in which these liquid dressings act. It is probable, however, that the sustained temperature of the sore and its vicinity occasioned by the prevention of evaporation, operates as a stimulus, while the moistened lint forms a sort of nidus for the granulations. That the temperature of the part is kept up is certain.

I have, hitherto, said nothing of the nature of the liquid selected as an application. My impression is, that in the bulk of cases some gentle stimulus is best. I have tried plain water, the solution of the nitrate of silver, of the sulphate of zinc, of the soda chlorinata, of opium, and the black wash. Amongst all these, the solution of the sulphate of zinc, in the proportion of two grains to the ounce of water, has appeared to suit most generally. When the sore has been more than usually painful, the solution of opium, of a similar strength, has agreed better. And foul, dirty, cachectic looking ulcers have seemed most benefited by the solution of the soda chlorinata, one part of which is dissolved in sixteen of water. These, however, are merely hints thrown out, as approximations to the truth. It remains for other surgeons, and for further experiments, to determine what may be their value.

I have observed that a light bandage is usually advisable. In some cases, more decided support is needed. Where the ulcer depends on a varicose state of the veins of the limb, without that inflamed, and eczematous or psoriasitic state of skin to which varices of the veins often lead, soap-strapping may be usefully employed. Perhaps the best method of applying this consists in setting on the

strips to just *below* the ulcer, *above* which other strips commence, the latter being the looser. The ulcer itself is thus left bare for the application of the dressing, over which farther strips are daily placed. The advantage of this is, that the ulcer can be got at without disturbing the greater portion of the strapping.

I know not what will be said by some gentlemen, when I own to the weakness of at times resorting to a poultice. Yet it has appeared occasionally to give relief, even when water-dressing has failed. When the sore is irritable and inflamed, one of bread and water, or of bread and Goulard water, laid on at night with a piece of oiled skin over it, has been productive of much comfort. At the same time, it is only fair to admit, that poultices may be grossly abused, and as ordinary applications are useless, or worse. When the sore is sloughy and inclined to phagedæna the opium poultice is invaluable.

In that inflamed condition of skin to which allusion has been made, Goulard water applied through the medium of rags, or a bandage covered with oiled skin, commonly gives much relief. It does not seem to agree so well with the ulcer itself, which may be dressed in the ordinary way. It is needless to observe, that for cases such as these, rest is particularly requisite.

Such are the few observations I would make upon the local treatment. Possibly a few may also be permitted on the general.

Of course it is requisite to attend to the state of the secretions. If the stomach, the liver, the kidneys, should be out of order, such medicines should be given as are calculated to restore their functions. It would be impertinent to dwell on *them*.

Of the value of purging there can be little doubt. Where the tongue is loaded and foul, with but moderate or impaired constitutional power, a condition very common amongst out-patients, bitter purgatives agree. The infusion of gentian with the tincture, and some sulphate and carbonate of magnesia, form a good though nasty compound. In females, with defective menstruation, or, at a later period with impaired digestive powers and low tone, the compound decoction of aloes, with or without scama, is useful.

Tonics are, in most cases, required after purgatives or with them. Circumstances must determine their selection. In cachexia, mercurial or otherwise, sarsaparilla bears the bell. Quina, gentian, steel, have their several applications. A cheap and a good tonic in persons with a weak circulation, and not disposed to cerebral congestion, is the compound steel pill. It is a great favourite with my excellent colleague, Mr. Cutler.

But there are very many cases in which the compound soap pill acts admirably. Elderly persons, with a varicose condition of the veins of the lower limbs, a languid pulse, and a feeble and not excitable habit, are sometimes wonderfully bettered by it. Nor does it appear to affect the head or constipate the bowels, so much as might have been anticipated. The dose may be three grains twice or thrice daily, and senna or aloes may be taken in the morning for the bowels' sake.

I am not so sure that this medicine suits the young or middle aged—undoubtedly it does not suit *so* well. It is apt to distress the head. In one woman between 20 and 30 years of age, disposed to flushed face and to cerebral fulness, it aggravated the latter to such a degree as to compel its discontinuance. In the cases I have selected for it, it is a valuable remedy.

With these observations, I will now take the liberty of giving the brief particulars of two or three cases intended to illustrate them. They have been drawn up by my brother, Mr. Athol Johnson, who has acted as Clinical Clerk. They are mostly in the condensed form of Report, and have been selected merely as samples, from amongst a considerable number.

CASE 1.—*Old Varicose Ulcer—Comp. Soap Pill and Lotio Zinci Sulphatis—Cure.*—Hannah Sadgrove, æt. 27, applied at St. George's Hospital, on the 16th of January, on account of a large varicose ulcer of the leg of long standing; a

variety of medicines were administered, and poultices, ointments, &c. applied, without any benefit. On the 28th March, the notes state that there was "no improvement: sores sloughy." Three grains of the compound soap pill were ordered to be taken three times a day, and the lotio sod. chlor. and afterwards the lotio zinci sulph. applied locally. On the 19th of April, the patient was discharged, cured, the ulcers being firmly healed.

CASE 2.—*Cachectic Ulcers of Leg—Comp. Soap Pill and Sol. Arg. Nit.—Cure.*

Catherine Bennet, æt. 30, servant. This patient applied at the Hospital on the 1st of Feb. with a cachectic ulcer of the leg, about the size of a crown-piece, which had first appeared about three months before; the veins of the extremities were also considerably enlarged. She was placed upon steel, with occasional purgatives, and a variety of applications, ointments, poultices, &c. were tried, without any apparent benefit. On March 25th three grains of the compound soap-pill were ordered to be taken daily, and a weak solution of nitrate of silver applied, under oiled silk, to the leg. The beneficial effect was immediate; the sore assumed a healthy character, which it never subsequently lost, and on April 23, the patient was discharged, cured, the ulcer having been for some time soundly healed.

CASE 3.—*Old Sloughy Ulcer—Comp. Soap Pill and Sol. Sod. Chlor.—Cure.*

Henry Butterfield, æt. 48, made O. P. Feb. 1st, 1843.—This was one of the worst cases of old sloughy ulcer, which had been seen at the Hospital for some time. It was of very large size, and there was great induration of the cellular membrane of the whole leg, with an extremely fætid discharge. The compound steel pill and other tonics were employed without any benefit. On the 4th April, there being then no improvement in the state of the ulcer, three grains of the compound soap pill were ordered to be taken three times a day, a warm bath twice a week, and a lotion composed of one part of liq. sod. chlor. to fifteen of water, applied under oiled silk. From this time a gradual improvement took place, and on May 16th he was discharged, the ulcer being quite healed, the circatrix appearing good and healthy, and the induration nearly all removed.

CASE 4.—*Very foul Varicose Ulcer—Gentian Mixture, and Sulph. Zinc Lotion—Cure.*

Mary Smith, æt. 47, washerwoman. Applied on the 12th April, with a painful varicose ulcer on the leg, of about the size of a shilling, with dark-coloured edges, and excavated surface, discharging foul and fætid matter. The health was much impaired.

She was directed to take gentian with carbonate and sulphate of magnesia twice a day, and to apply the sulphate of zinc lotion (two grains to the ounce) under oiled silk. The sore immediately improved in appearance, and by the 18th May was quite healed. She was subsequently attacked with pain in the head, rendering it necessary to cup her, but the ulcer remained healed.

CASE 5.—*Old Varicose Ulcers—Gentian Mixture and Opiate Lotion—Cure.*

Harriet Puckett, æt. 40. This woman had been suffering from very large varicous ulcers of the legs for a long time: when she applied for relief at the Hospital, about the beginning of February, the ulcers were in an indolent condition, and had then existed for about eight months; the health was also considerably impaired. Bitter purges, tonics, &c. were tried, and a variety of ointments applied to the sores, without much benefit to the ulcers, the report on the 28th March being that "the granulations were livid and flabby." The compound soap pill was then ordered, but this affected the head so much that it was necessary to leave it off. Gentian with carb. magnes. and sulph. mag. was then tried, with the sulphate of zinc lotion, and afterwards Goulard water, both these appli-

cations, however, gave so much pain that they were omitted, and on April 23, a solution of opium, (gr. ij. ad ℥ j.) were substituted. On the 4th of May, the ulcers were all healed.

CASE 6.—*Cachectic Ulcerations of both Legs, of long standing—Tonics, Black-wash and Sol. Sod. Chlor.—Cure.*

Benjamin Bennett, æt. 42, applied at the Hospital on the 26th April, with cachectic ulcers on the front of either leg, some of which were as large as a crown-piece. There were also scars on the forehead, &c. of other cachectic sores, and the remains of destructive ulceration of the soft palate.

Three years before this he had a sore on the penis, for which he was freely salivated; about a year afterwards he was attacked with sore-throat, &c. which had continued, off and on, up to the time of his application at the Hospital.

He was ordered to take the haustus cinchonæ, with pot. iod. gr. v, twice a day, the bowels were kept moderately open, and the lotio nigra applied to one leg, the sol. sod. chlor. to the other, under oiled silk. On the 2d May, the granulations were florid, in some ulcers even exuberant. There was no great difference in the progress of the two legs. The granulations were kept down by means of the argenti nitras, and on the 1st June, the patient ceased to attend, the sores on both legs being quite healed.

II. INCISION OF BURSÆ CONTAINING THE "HYDATIDIFORM," OR "MELON-SEED" BODIES.

Every surgeon is aware that both the simple and vaginiform bursæ, but more especially the latter, are liable to be distended not only with an increase of their natural secretion, but also with numerous small and separate bodies, oval or rounded, and frequently bearing a close resemblance in their form to melon-seeds. On the Continent, they have been considered as allied in nature to hydatids, but the prevalent, and more probable opinion, in this country, regards them as merely lymph broken down and rounded by attrition in a fluid medium. One of the cases, which will be detailed, appears to lend a strong confirmation to that idea.

My object, however, in touching on the subject, is rather connected with the treatment of the disease, and the propriety of resorting to the knife.

When the bursa is simply filled with fluid, with or without thickening of its parietes, blistering and pressure are commonly effective in reducing the enlargement. The same means, no doubt, may frequently succeed in procuring the absorption of effused lymph. But when this is disintegrated, and the "melon-seed" fragments have been formed, it is questionable, alike in theory and fact, whether any applications on the surface can exert much influence on them. Now, as bursæ in this state occasion a good deal of annoyance to the patient, it becomes a question whether an incision with the view to the removal of the bodies can be recommended.

Although it *has* been recommended and performed, there have occurred so many instances of subsequent inflammation and suppuration, that the experience of surgeons is against the step.

It is fair to suppose that the danger is this:—a cavity is opened, which is prone by the nature of its tissue (a synovial one) to suppurative action—pus is secreted—it gets no free vent—and hence the mischief. If this be so, it follows that the more complex and ramified the sac, the more imminent the risk. The sub-cutaneous simple bursæ, such as that above the patella, would be favourably placed for an incision—the deeper simple bursæ, or the vaginiform, would be unpropitiously circumstanced. And such, I should say, is the fact. The supra-patellar or olecranal bursa may be laid open, with comparative, though not always,

absolute impunity—the scapular, trochanteric, carpal and tibio-tarsal bursæ may not.

The risks, in fact, that wait on meddling with these latter, are great. In two instances I have witnessed extensive suppuration within it and around it, confinement of matter, extreme constitutional irritation, and fatal secondary inflammation from making an opening into the bursa, enlarged and filled with fluid over the inferior angular of the scapula. In three instances, I have seen wide-spread suppuration in the fore-arm, from incision of the vaginiform bursa in the wrist, connected with the flexor tendons. We had lately a patient in the hospital, in whom this bursa was much enlarged, and presented a swelling in the palm, communicating under the transverse carpal ligament, with another in the lower part of the fore arm. Fluid could be pressed from one swelling to the other, and, I think, there was the crepitation indicative of lymph. An incision was made into the palmar swelling—much inflammation and suppuration in the fore-arm followed, and the patient, of her own will, quitted the hospital, in a very dangerous state. I have not heard the result.

But though, as a general rule, it is inadvisable to make an opening into the vaginiform bursæ, and the deeper-seated simple ones, it would be going too far to prohibit such a measure altogether. The inconvenience may be such as to justify the encounter of some risk—or suppuration may be actually occurring or established in the cavity. Besides, it may happen that the bursa has been incautiously punctured, mistaken, perhaps, for something else, or supposed to contain only fluid, when the "melon seed" bodies, &c. are within it. It becomes then, a desideratum to determine, if a puncture is to be made, what sort of a puncture that should be, and what steps are to be taken to obviate the dangers which *any* puncture may give rise to.

It appears to me that, if we do make an opening, it should be a free one—an opening which may not only discharge the actual contents of the bag, but render confinement of the pus that is to form impossible. No half-measure can be safe —lodgment of matter must be prevented, not relieved. These sacs are as much disposed to form lymph as pus, and a moderate opening will be partially, at all events, hemmed round with the former. Whatever we may do afterwards will probably not retrieve this false-step—some purulent accumulation will take place —and if it does so, the risk of secondary inflammation is imminent.

The following case may seem to support these observations. I would remark that the diagnosis, prior to the puncture, was uncertain. The gentleman, under whose care the patient was, previously to his application to me, conceived that the case was one of fatty tumour. The puncture with the exploring-needle determined of course the existence of fluid, but its clearness and facility of exit deceived me, and led me to imagine that it exclusively occupied the sac. This induced me to make the subsequent puncture more readily, and I experienced some surprise when the quantity of liquid proved not to exceed two or three drachms, the bulk of the contents being solid. However, the opening *was* made, and immediately, in accordance with the principles that have been stated, I enlarged the incision to fully two inches and introduced between its edges such a dossil of wet lint as kept them effectually asunder. The result appears to have stamped the propriety of the practice.

There is little doubt that the bursa was that connected with the tendon of the glutæus maximus. This stretches beneath the fascia lata. It was in this instance of large dimensions, nearly capable of holding a fist, and when the masses of lymph were made to tumble out of it, the look of the thing was unpleasant. I am confident that, had matter once been confined there, the life of the patient would have been in great hazard.

The process of transformation of amorphous masses of gelatinous-like lymph into the "melon-seed" bodies, was equally striking and obvious. The successive stages were apparent in the different portions. I now subjoin the case.

CASE 7.—Wm. Weare, æt 25, servant. Admitted April 19th, 1843, with a globular swelling about as large as a moderate sized melon, superficially subcutaneous, but stretching deep, situated on the right buttock, above and behind the trochanter major. No distinct fluctuation, but feels rather like a fatty tumour. On bending the thigh, it becomes much more tense, prominent, and defined, and the fluctuation is much more evident. Skin over it unaltered; no pain.

States that he first discovered the swelling accidentally, five months ago; it was then about the diameter of a crown-piece, and has gradually increased in size ever since. Knows of no cause.

Has been attending as out-patient for five or six weeks, when the tumour was punctured with a grooved needle, and some yellowish clear fluid escaped.

21st. Punctured with lancet. Two or three drachms only of fluid escaped, the remainder of the contents consisting of the gelatinous sort of matter which is found in bursæ and vaginiform sheaths. Masses of considerable size, and irregular form; one, opaque and somewhat broken up, was apparently in process of transformation into "melon seed" bodies. It was necessary to squeeze the cyst in order to get out the masses, some of which were left behind, and the opening was enlarged to 1½ or 2 inches; a piece of wet lint was then introduced into the dependent extremity of the wound.

Catap. panis calid. H. sennæ.

22d. No symptoms of irritation. Edges already granulating. Sac nearly empty. Some yellow opaque masses were squeezed out, consisting of portions which with very little separation and attrition, would be "melon-seed bodies" or "hydatids." *Vespere.* Heat of skin, with foul tongue and some pain.

H. salin. efferv. 4tis horis.

25th. He has continued to have some little feverishness. There has been copious discharge generally of thin yellow matter, but now rather thicker. Pain at times. No surrounding inflammation. Tongue still rather foul.

Pil. hydrarg.
Ext. coloc. comp. āā gr. v. h. n.
Haustus sennæ cras mane.
Haustus salinus bis in die.

May 2d. Complains of severe pains across the forehead. Tongue still foul.

Infus. ros. ℥iss.
Magnes. sulph. 3j.
Acid. sulph. dil. ♏x. bis in die.
Omitt. alia. Ordinary diet.

8th. Has lost the pain in the head. A little purulent discharge from the wound which is contracting. Health good.

24th. Wound now healed to a mere spot, furnishing only a little oozing. Discharged.

Spirit of the British and American Periodicals.

STRUMOUS PERITONITIS.

IN the March Number of the Dublin Journal we have two Papers on this subject—one from that accomplished physician, Sir Henry Marsh—the other from Dr. Churchill.

Sir Henry Marsh's communication is chiefly occupied with cases of the disease. Dr. Churchill's contains a resumé of its history and management. To this we shall first and briefly allude.

The disease is an inflammation of the serous membrane of the abdomen, accompanied with effusion, and attacking persons of a strumous diathesis. It may occur either in an acute or chronic form, the latter being either a consequence of the former, or originating per se.

It generally occurs between childhood and puberty, or for a few years after that period—it is almost confined to children of a strumous habit and lymphatic temperament, and is often complicated with mesenteric disease.

Causes.—Bad diet, wet, cold, &c. may be enumerated. In most instances, it is hard to assign a cause. There may be extension of irritation from the intestinal mucous membrane—or it may follow febrile diseases.

Symptoms.—"The mode of invasion varies widely. In one class of cases the patient labours under diarrhœa for a considerable time with or without pain; the appetite is pretty good, the temperature natural, and the pulse quiet; but at length —it may be weeks or months—we hear complaints of a sensation of pricking, or of paroxysms of pain, and a feeling of tightness in the abdomen, which, upon examination, is found to be more or less swollen.

"In other cases there is a certain amount of pain from the beginning, occurring in paroxysms, with perfect intervals, and though at first limited to one part of the abdomen, yet by degrees spreading over and occupying the whole."

The early symptoms may be so slight as to escape attention. emaciation at last awakening it. There may or there may not be pain in the commencement.

Soon or later, however, this occurs most frequently in paroxysms of varying intensity and duration, with intervals of complete relief; beginning in some one part of the abdomen, and gradually spreading over the entire. There is generally tenderness on pressure, and the patient almost always complains of uneasiness on attempting to walk or stand, and in some cases finds it impossible to stand erect.

After an uncertain interval, fulness is complained of, and the abdomen will be found more or less swollen. Percussion generally yields a dull sound, but not always, for when the bowels are much disordered, they sometimes become tympanitic.

Fluctuation is generally distinguishable, if carefully made. According to Dr. Churchill, the best mode is to lay the child on its back, and accustom it for a short time to the presence of the hand upon the abdomen; then, placing one hand, with the fingers separated, on one side, and percussing very gently with the other, the muscles will not be excited into action; and, if fluctuation be perceptible with the second or third finger, we may be certain of the presence of fluid; for the pressure of the forefinger upon the skin effectually arrests the vibration which results from its elasticity.

The enlargement of the abdomen is not always equable—as it increases, the

whole abdomen becomes tense and hard, with a hot dry skin, and large blue veins ramifying on it.

Sometimes the intestinal functions are long performed with regularity; but, in most instances, "we find the tongue white, loaded, and flabby; more or less thirst; the appetite irregular and fastidious, sometimes increased, more frequently impaired or lost altogether; the bowels relaxed or constipated, perhaps alternately; the stools fœtid, and of a whity-brown or blueish colour."

As the disease advances the pulse generally ranges from 100 to 140, with pyrexia of the hectic character.

Formations.—It is a fortunate issue when *resolution* occurs.

The disease may end in a circumscribed collection of the effused fluid and its final evacuation, with more or less subsidence of the original affection. Under such circumstances patients have been known to recover. Dr. Burns mentions a case of this kind; and Dr. Abercrombie states that the matter may make its way through the abdominal parietes or the inguinal ring.

But *death* usually occurs, sometimes with unexpected rapidity, in consequence of ulceration and perforation of the intestines.

Post-mortem appearances.—"Occasionally the vessels of the peritoneum are injected, though sparingly; there is more or less serum effused into the abdominal cavity, with shreds of lymph floating therein. The intestines are more or less agglutinated together, and often thus assume the appearance of sacs of matter. Where there has been perforation of the intestines, we find fæcal matter mixed up with the serum, and can generally detect the communication with the intestine through which it has passed. The peritoneum itself is often thickened, and coated with a layer of lymph; sometimes it is studded with miliary tubercles, or has tubercular matter deposited upon it. In some cases the mucous membrane is intact, in others, ulceration has advanced to different stages. The mesenteric glands may be free from disease, or they may be enlarged, and contain tubercular matter."

Diagnosis.—"When pain and swelling of the abdomen, with fluctuation, are present, the diagnosis will be easy; but in those cases in which there is no pain, and but slight tenderness, with little disorder of the digestive organs, there may be great difficulty. Our principal guide is the enlargement of the abdomen, which ultimately always occurs, and the fluctuation, which, by a little care, may generally be perceived. When there is much dyspnœa, or when the diarrhœa is severe, we must be on our guard against supposing the disease limited to the chest or mucous membrane of the intestines. We know that both may be seriously involved, concurrently with the peritoneal membrane. The same may be said of the mesenteric glands; they may also be diseased; but when they are affected alone, we shall find neither the abdominal swelling (at least to the same extent) nor the fluctuation."

Prognosis.—It is generally unfavourable. When the mesenteric glands, or intestinal mucous membrane, or pleura are involved, the case will probably end badly.

Treatment.—That usually recommended consists of leeches to the abdomen, fomentations, purgatives, of which calomel forms one of the ingredients, alteratives sometimes, tonics, chalybeates, absorbents, &c. But some cases are curable, if treated early and well. Dr. Churchill advises:—General bleeding, perhaps, never—leeches—poppy fomentations—a piece of lint wet with laudanum on the abdomen—a warm bath every, or every other night—castor oil, or Gregory's powder if necessary—astringents and anodynes for diarrhœa.

"But our principal reliance is upon mercury, given so as to affect the gums, if possible. I believe that the credit of thus administering mercury in this disease is due to Sir H. Marsh, as I have found no allusion to it in any authority. It may be exhibited internally or by inunction; in many cases the latter is preferable, as when diarrhœa occurs, the bowels are too irritable. A scruple of the strong ung. hyd. should be gently rubbed in over the abdomen, night and morning, and continued until the gums are touched, or the disease shows signs of yielding to the treatment.

"Blisters to the abdomen are very useful; they should be small, and applied successively to different parts, and dressed with the blue ointment."

On the subsidence of pyrexia, tonics and more generous diet—every precaution during convalescence.

Many cases are related by Sir Henry Marsh, and Dr. Churchill. The preceding description rather refers to the chronic form of the disease. We subjoin a sample of the acute.

Case.—"A girl, aged 13, one of a family, every member of which exhibited signs of struma, was attacked with gastric remitting fever, presenting the usual symptoms of that disease. On the fourteenth day of her illness, an abatement of the febrile symptoms having taken place, she was suddenly seized with abdominal pains, rendered more severe by pressure. There was a great increase of fever, the pulse became exceedingly quick, small, and tense, the skin hot and dry, with an expression of extreme distress and anxiety in the countenance. The pains were relieved by fomentations, by the application of a few leeches (for at that stage of the fever, she could ill bear the detraction of blood), and by the internal administration of calomel and opium. Still, however, the general distress continued to increase, and, after the lapse of some hours, she presented all the characters of one dying of peritoneal inflammation; the abdomen began slowly and gradually to enlarge; it became tense, but not in the slightest degree tympanitic; the pulse was now so small that it could scarcely be felt, and so rapid, that it could not be numbered; the debility was extreme, and she appeared to be sinking fast. At the expiration of about two days, during which time her death was hourly expected, the abdominal distention had considerably increased, and fluctuation had become unequivocally perceptible. Mercury was rubbed in over various parts of the body, in quantities only limited by the fatigue of the patient, and was also continued internally. The bowels all the while yielded readily to injections, and the evacuations were fluid and bilious. After some time, all abdominal pain having ceased, and the abdomen having reached its highest degree of distention, the pulse became more distinct, and the debility less overwhelming; the skin began to relax, and slight mercurial ptyalism was established. The urine, which had hitherto been high-coloured and scanty, became more abundant, and deposited a copious lateritious sediment. The relaxation of the skin, the increased renal secretion, and the slight ptyalism, occurred simultaneously. Gradually the abdomen became less tense, and, as was proved by measurement, slowly diminished in size. During the progress of this slow process of absorption, the patient was nourished with farinaceous food and ass's milk. The influence of mercury on the system was still moderately maintained, and the febrile symptoms gradually receded. At the end of about twelve days the abdomen had subsided considerably. The patient daily improved in health, and ultimately no traces of the effusion remained. She is now, after the lapse of four years, restored to tolerably good health; the alvine functions are normal, but she looks pale and delicate, and requires in her general management, more than ordinary care and attention. A few months since, having been attacked with catarrhal fever, which proved tedious and obstinate, the ingress of phthisis was seriously apprehended. She is now, however, exempt from signs of pulmonary disease,

and enjoys as much health as falls to the lot of those whose constitutions are innately delicate and feeble."

We think that the profession are under obligations to Sir Henry Marsh and to Dr. Churchill, for directing their attention so decisively to this disease. And the stress laid on the use of mercury is likely to prove eminently serviceable.

ON THE USE OF NITRIC ACID IN CERTAIN FORMS OF HÆMORRHOIDAL AFFECTIONS. BY DR. HOUSTON.

After all that has been written about piles, we believe that many medical men are anything but well-informed respecting them. They look upon them as varicose veins, and as nothing else—a capital mistake. Dr. Houston's paper which we shall now notice, exposes this delusion.

1. The form in which hæmorrhoids most commonly exist, is that of a simple varicose state of the veins; and it would be well if to all such, the names "varices," or "varicose tumours of the rectum," were applied and restricted. We agree with Dr. Houston. Few persons, past middle life, are free from these. They appear and disappear on the mucous surface, or under the skin, in the neighbourhood of the anus.

On external Hæmorrhoids, of this character, we need not speak. They are sufficiently understood.

Internal Hæmorrhoids.—Dr. Houston believes that varix is not the condition which most usually produces distress in "inward piles."

"The state of the mucous membrane covering such varices would appear to influence the condition of the case, more than of the varix itself. While the mucous membrane continues smooth and pale, and free from morbid sensibility, there will be little distress; and the tumours will swell and subside, and even pour out blood occasionally, without the patient being at all aware of the extent of organic derangement which be labours under: but as soon as a relaxed state of the membrane,—a state to which it will soon be brought by the irritation and dragging to which it is subjected by the pressure of the fæces against the tumour of the varix, and the efforts of straining to overcome constipation,—as soon as this state of the membrane is induced, then, the varix coming down under the sphincter, is strangled, made to bleed, and to inflame. Or when, from similar causes, ulceration of the mucous membrane over the varix is established, then, distress of another, and even a worse description, viz., tenesmus, muco-purulent discharges, strainings at stool, and hæmorrhages of dangerous amount are entailed upon the sufferer. Or, still farther, when that state of the mucous membrane, to which the term "vascular tumour" is applied, supervenes, as I believe it often does, upon a varix, then, a simple and otherwise innocuous affection becomes one productive of most poignant suffering."

Vascular Tumour.—Dr. H. is disposed to regard this as an affection of the mucous membrane and sub-mucous tissue exclusively. Though it may be independent, it usually has for its basis a knuckle or bunch of varicose veins.

"I have seen it covering the surface of one varix in a rectum, which others in the same bowel have been smooth, and free from any such growth,—the former being the source of much annoyance, the latter giving no trouble at all. I have also seen the affection, in young individuals particularly, where the veins were quite free from any varicose dilatation, but in whom, after a time, varices formed as the result of the irritation of the vascular tumour. And I have observed that, in almost all cases of inward piles of long standing, no matter whether the affec-

tion have begun originally as a varix, or as a degeneration of the mucous membrane, both affections come to be present in conjunction, reciprocally aggravating each other's severity."

These tumours vary in size, and in number from one to so many as to cause, by their protrusion through the anus, a permanently widened state of that aperture and a habitual prolapse, not only of the tumour itself, but also of a portion of the bowel. Dr. Houston's description of the tumour is graphic.

"In the early periods of the affection, the tumours are so soft, compressible, and free from pain as scarcely to be discoverable by the finger when introduced into the rectum, and scarcely, therefore, to be deserving of the term, tumour; but, when of long standing, and especially when they have been permitted to remain down for protracted periods at the water-closet, they acquire an increase of firmness and a tenderness which render them easily detected by such manipulations, and give them a tangible and permanent character. The dragging and pressure to which they are subjected in being pushed out and squeezed by the sphincter in defecation, renders them likewise prominent, and gives to them often a pedunculated or polypus-like form. The surface of the tumour is either granulated like a strawberry, or of a villous aspect. It is of a red colour, and, when protruded from the anus, bleeds from every pore as from a sponge. It is easy to satisfy one's-self on this latter head, by drying the surface of the tumour, when a fresh issue of blood instantly takes place from every point of its surface. The blood discharged, in such cases, is always of the arterial red colour,—a circumstance which often, in itself, indicates the true nature of the affection, and enables us to distinguish it from rupture of a varix. But, nevertheless, although this may be true as regards the direct issue of blood from the part, yet this very fluid, may, if allowed to lie in the cavity of the rectum before being discharged per anum, acquire a dark red, and even a grumous character. The bleeding in the former is also of more frequent occurrence, appearing with every effort at defecation, and weakening the patient more by the frequency and persistency of the drain than by the quantity lost at stated periodical intervals, such as usually takes place in the bursting of varices from over distention."

Dr. Houston thinks that, under the head of "vascular tumours," there are two varieties of organic lesion, curable by the same means. One of these is that to which the term "erectile" has been applied, from the supposed resemblance of the disease to congenital affections of this class; the other,—a congested, hypertrophied, and tender state of the membrane, the result of irritative, or inflammatory action.

The first, he observes, "is regarded by many as a sort of aneurism by anastomosis of the small vessels of the mucous membrane and sub-mucous tissue exclusively, and may be independent from the first of varices of the genera veins about the anus. This affection may occur in youth, and has been seen high up in the intestinal canal; but its most frequent seat is the lower part of the rectum. There is not originally or necessarily any pain arising out of it; but, by long exposure in the rectum to many sources of irritation, and by enlargement and prolapse from the anus, it runs into a state of actual disease, of which Cases I. and II. may serve as examples. It differs from ordinary navi in not being necessarily congenital, but resembles them too much in its persistent tendency to increase in growth. They are, both, affections which equally require operations for their removal."

The second variety of vascular tumour is of a chronic inflammatory nature, and resembles the conjunctiva in old cases of chronic conjunctivitis. Like that, it secretes pus independently of ulceration."

"Such tumours are apt to form on old internal varices, which, by their projecting into the cavity of the bowel, expose the membrane covering them to more than ordinary pressure and irritation, and thereby become the direct cause of this morbid development. Once established in connexion with the surface of a

varix, the two making between them a compound disease, the distressing qualities of such an affection are not slow in exhibiting themselves. Thus, in case No. III., in which there were several internal projecting varices, that only on which this hypertrophied condition of the mucous membrane existed, gave annoyance, and on the removal of that and that singly, all hæmorrhoidal distress subsided. The 'master pile' being removed, the others fell back into a state of painful quiescence. As in the foregoing variety, there is no relief for this affection but in destruction of the morbid growth."

If this be true, asks Dr. Houston, why use knife or ligature for a disease of surface? He advises for it the *pure nitric acid*, and apply it in the following way.

"Let the patient strain as at the night-chair, so as to bring the tumours fully into view; and while they are so down, let him either lean over the back of a chair, or lie down in the bent posture on the side on which the disease exists, with the buttocks over the edge of the bed. Let a piece of wood, cut into the shape of a dressing-case spatula, be dipped in the acid, and then, with as much of the acid adhering to it as it will carry without dripping, let it be rubbed on the tumour to the extent desired. The due effect of the acid on the part is shown by its changing it to a grayish-white colour. If a superficial slough be all that is required, a single application may be enough: if a more deep one, then, two or three applications of the wood dipped in the acid may be made in quick succession; which, being finished, let the part be well smeared over with olive oil, provided beforehand for the purpose. The prolapsed parts should then be pushed back within the sphincter, the patient put to bed, and an opiate administered. The pain of the application is sharp, and burning at first, but goes off in two or three hours, and does not again return in the same form. A general uneasiness about the anus, on motion, together with a slight sense of heat, fullness, and throbbing, are felt for a few days; and there may be some little feverishness; but I have not seen or heard of any more serious effects from the remedy. In Case II., a slight stranguary, which was experienced for a short time, disappeared under the mist. camphoræ c. opio. The symptoms following the application of the acid are usually so mild as not absolutely to require confinement to bed more than a few hours; although, for many reasons, such confinement may often be desirable. On the third or fourth day, a purgative draught should be administered, when the bowels will be found to yield to the medicine, generally without either pain or prolapse of the rectum. The progress after this to healing is rapid, and free from any disagreeable symptoms."

We shall certainly make trial of Dr. Houston's proposal.

ON THE USE OF OIL OF TURPENTINE IN HEMERALOPIA OR NIGHT-BLINDNESS.

By CHARLES KIDD, Esq.*

Two cases of this rare disease came under Mr. Kidd's care in the latter part of 1842. Nothing abnormal could be detected about the eyes in either case, with the exception of some sluggishness in the contraction and dilatation of the pupils, with a general heavy appearance about the forehead and eyes. After employing the ordinary treatment by aperients and tonics without any benefit, the iodide of potassium, mercury, succession of blisters, strychnine, &c., were tried but without making any impression on the disease. At last, considering the imperfect action of the pupils, the want of the usual dilatation at night, perhaps shutting out a large proportion of the faint rays which would otherwise get through the lens to the retina, Mr. Kidd was led to employ turpentine, a medi-

* Dublin Medical Press, May 10.

cine possessing great influence over the iris. In the course of a fortnight after the use of this remedy, the first case was discharged cured, and shortly afterwards the second became entirely relieved of this distressing complaint, and has continued well up to the present time.

Mr. Kidd remarks, in conclusion, "from the rapid effect of the ol. terebinthinæ in these cases, I am quite satisfied of its specific action being exerted on the *muscular* tissue, shall I say (!) of the iris, or perhaps on some *serous* accumulation under the membrane discovered by Dr. Jacob. The latter more than once struck me as its *modus operandi*, but of course it would be premature to give an opinion from two cases. If it should on further examination prove to be the case, it is only an additional instance of how deeply indebted we are to the labours of that eminent anatomist."

On the Special Function of the Skin. By R. Willis, M.D.*

Though the due performance of the function of the skin is well known to be of great importance to the health, physiologists are not yet agreed as to the precise purpose in the animal economy which it performs. Dr. Willis considers the water as the essential excretion; not, however, in the usual sense in which the word excretion is used, nor yet as a means of regulating or reducing temperature. In what way then does it happen that health and even life can be immediately dependent on the elimination from the general surface of the body of some thirty-three ounces in the course of the twenty-four hours? To this the author answers,—by securing the conditions which are necessary for the endosmotic transference between arteries and veins of the fluids that minister to nutrition and vital endowment.

It is admitted by physiologists that the blood exerts no influence on the body until that portion of it which has been denominated the plasma has transuded from the vessels and come into immediate contact with the particle that is to be nourished and vivified; but no physiologist has yet pointed out the efficient cause of these tendencies of the plasma, first to transude through the wall of its efferent vessels, and secondly to find its way back again into the afferent conduits. The explanation given by the author is, that in consequence of the out-going current of blood circulating over the entire superficies of the body perpetually losing a quantity of water by the action of the sudoriparous glands, the blood in the returning channels has thereby become more dense and inspissated, and is brought into the condition for absorbing, by endosmosis, the fluid perpetually exuding from the arteries, which are constantly kept on the stretch by the injecting force of the heart.

Repeated experiments have demonstrated the fact that the blood in the veins is of somewhat greater density than that in the arteries. If the specific gravity of arterial blood be allowed to be 1050, that of venous blood in the mean will be 1503.

In an appendix to the paper, the author points out a few of the practical applications of which the above-mentioned theory is susceptible.

In temperate regions, interference with the function of the skin, and principally through the agency of cold, is the cause of the greater number of acute diseases which prevail. Animals exposed to the continued action of a hot dry atmosphere die from exhaustion; but when subjected to the effects of a moist atmosphere of a temperature not much higher than their own, they perish by the same cause as those which die from covering the body with an impervious

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* Medical Gazette, April 14.

glaze: for, in both cases, the condition required for the access of oxidised and the removal of de-oxidised plasma are wanting, and life necessarily ceases. The terms *miasma* and *malaria* may, according to the author, be regarded as almost synonymous with air at the temperature of from 75° to 80° Fahr., and nearly saturated with moisture.

The secretion of the skin otherwise suppressed is attended with no less fatal consequences. What kills a patient within the first 48 hours of a bad attack of scarlatina? The autopsy shows nothing amiss. He died undoubtedly from the complete suppression of the function of the skin.

AMMONIACAL URINE.

IN one of the excellent lectures on the physical and pathological characters of Urinary Deposits, by Dr. Golding Bird, now being published in the Medical Gazette, in speaking of Carbonate of Lime, Dr. Bird takes the opportunity of expressing his doubt whether the urine is by any means generally *secreted alkaline*, even in those cases of alkaline urine produced by blows on the back, &c. Urea may be regarded as carbonate of ammonia, *minus* the elements of water, or a *carbonamide*. The conversion into the carbonate takes place but slowly in healthy urine out of the body, and still less frequently whilst retained in the bladder. Under certain circumstances, however, especially where an excess of mucous matter is secreted, this substance acts the part of a ferment, induces a new arrangement of the elements of urea and water, and thus the urine is voided in an ammoniacal condition. Under ordinary circumstances the vital powers of the bladder are sufficient to prevent the urine from undergoing this change, even though much mucus be present. When, however, the nervous influence is materially diminished, as in cases of injury of the spine, &c., the contents of the bladder become subject to the ordinary laws of chemistry. In this instance, Dr. Bird is induced to believe, from the result of many cases, that the urine is secreted by the kidneys in the usual subacid condition, and that it becomes alkaline by the subsequent change which it undergoes in the bladder, when the vital endowments of the latter have become depressed, and the mucus acting as a ferment converts the urea into carbonate of ammonia.

Thus in the case of a woman labouring under complete paraplegia, whose urine was seldom voided, and was ropy, alkaline, and offensive, on washing out the bladder with warm water, and leaving an elastic gum catheter in the urethra, so that the urine might escape almost as soon as it reached the bladder, the urine appeared clear, pale, and slightly acid, whilst that voided 24 hours before was dark, offensive, alkaline, and turbid, not only from mucus, but from sediment consisting of carbonate of lime and the earthy phosphates.

The best and most satisfactory cases in which the urine was secreted alkaline, are those recorded by Dr. Graves of Dublin; one of them was a case of adynamic typhus fever, in which an abundance of carbonate of ammonia existed in the urine, and a corresponding deficiency of urea and uric acid prevailed. As the patient became convalescent the carbonate of ammonia vanished, being replaced by an equivalent proportion of urea and uric acid. The second case was one of fatal general anasarca, following exposure to cold; Here the urine was loaded with carbonate of ammonia, but neither urea nor albumen existed. After death the bladder appeared perfectly healthy.

SOME CASES OF PAINFUL AFFECTIONS OF THE FIFTH PAIR OF NERVES. BY JOHN HAMILTON, M.R.I.A.*

MR. HAMILTON relates seven cases, all of them possessed of interest. We shall give a brief account of some of them.

CASE 1.—*Painful Subcutaneous Tubercle in the Temple, over the Temporo-auricular Branch of the Superior Maxillary Nerve.*

Charles Dale, æt. 25, a shoemaker, "complains of the most distressing attacks of pain shooting from the temple all round the right side of the head up to the vertex, behind to the occiput, and before to the centre of the forehead; from the same spot proceed darts of pain like fire to the right eye, with an appearance of red spots before the eye, and dimness of vision, and at the same time he gets deaf of the right ear, the eye becomes swollen, and there is such discolouration about it that he has often been asked if he had a black eye; the pain also engages the side of the face, but never the jaw or teeth. There is a general soreness of the whole scalp at that side; but he refers the origin of all his sufferings to the presence of a small tumour at that part of the temple from which the painful sensations spring; and, on examination, I discovered in front of, and just above the helix of the ear, at the roots of the zygoma, where the temporal artery commences, a small tubercle about the size of a grain of shot; it was moveable, and evidently rather deeply situated, and after a little handling disappeared, as if it sunk into the substance of the parts beneath: after he had performed the action of mastication, it became again apparent. He was always sensible of a painful feeling in it. increased by pressure or by the action of the temporal muscles in eating. The shocks of pain commenced like the blow of a heavy stick at this particular spot, and at such times the tubercle used to become larger. He has suffered from the complaint for eleven or twelve years; it began with paroxysms of pain about once a month, sometimes oftener, sometimes with intervals of three months, increasing in violence; at length he got an epileptic fit, commencing with a gushing sensation (aura epileptica) from the site of the tubercle (of whose existence he was not then aware), with insensibility and convulsions; he had eighteen of these fits, the last well marked one about seven years ago. Turpentine, which he then took, subdued them, and has since kept them in check, but not entirely, as he had shocks afterwards as nearly like the fits as possible. But during the whole of this long period, he has never ceased to suffer from occasional attacks of pain, which latterly have increased both in severity and frequency; so much so, that a day now scarcely passes without a shock, and in the interval he is never free from a dull, heavy, stupifying pain in the right side of the head; he has also, very lately, had some attacks bordering on epilepsy, short intervals of insensibility, preceded by an aura from the tubercle." His general health was bad—his symptoms were of a highly nervous character—and medicines had proved useless. Mr. Hamilton performed excision of the tubercle.

"An incision was made over the tumour, and a small dark-coloured tubercle became apparent, which was readily removed; but after its removal, pressure on the sides of the place where it had been, gave rise to disagreeable sensations, similar to what he had felt when the tumour had been pressed. I therefore removed two little substances in these situations, which, afterwards examined with a magnifier, had the appearance of portions of nerve. The tubercle itself was

* Dublin Journal, May, 1843.

round, of a brown colour, composed of a perfect cyst, containing a small, hard, calcareous substance of a chocolate colour; the surface of the tubercle was quite clean, nothing like nervous substance attached to it."

It was found to be composed chiefly of carbonate of iron, with a little carbonate of lime.

For some days after the operation, he was free from his former sensations, and his health improved remarkably; but in the course of a fortnight the old symptoms returned. "On examination, I found a small moveable tumour in the situation of the other; I was puzzled whether this was a second tubercle or not. Cutting down on it, I could discover nothing definite; there only appeared a little whitish condensed cellular tissue, which was painful on pressure: this I took as my guide, removing every part of the substance that produced the peculiar sensation on pressure. When I had done so, to some depth, I clearly distinguished a branch of a nerve crossing the bottom of the wound; touching this with the blunt end of a probe, induced a peculiar uneasy feel, which made him exclaim that he was sure I was touching a nerve. I now understood the second accession of painful symptoms to have been caused by the pressure of the cicatrix (formed after the first operation) on this nerve; the cicatrix occupying the situation of the tubercle, and producing the same mechanical effects. As there appeared to be some morbid sensibility of the sides of the incision, I touched them lightly with caustic cali, and dressed the wound from the bottom."

It is now eight months since this operation, and the patient continues well.

Mr. Hamilton observes that the nerve affected was probably the temporo-auricular, or temporalis superficialis of the superior maxillary branch of the fifth. The tubercle itself differed in structure from the common subcutaneous tubercle, which is usually fibrous, fibro-cartilaginous, or cartilaginous. The most analogous case is reported by Mr. Windsor, in the Edinburgh Medical and Surgical Journal for 1811; he removed a tubercle from the forearm of a woman, which proved to be a cyst, containing numerous little grains, which gave the sensation of sandy or earthy bodies.

Mr. Hamilton knows but of one other case in which subcutaneous tubercle was met with in the head. That case occurred to Sir P. Crampton. But he has seen an instance of it on the inside of the right side of the upper lip.

CASE 2.—Catherine Dunfield, æt. 25, had had strumous sore throat, and superficial lupus on the forehead, as well as painful sciatica.

"May 1, 1840.—She went to bed well, but awoke in the night with a most severe pain in the back of the head, and darting through the ears. It was most acute, and lasted till morning. I saw her a week after. During the intervening time she had had each night a paroxysm of the pain, which went off towards morning. She had a second paroxysm at 3 o'clock, P. M., and suffered from it at intervals during the day. The attacks were increasing in severity. She was nervous and low. Pulse 76; tongue slightly furred; no sickness of stomach; bowels confined.

"Purging, quinine, mercury to slight salivation, colchicum, a small cupping at the back of the neck, and a blister to the occiput, failed to relieve her; but, on the contrary, she became much worse, particularly after the cupping, though only four ounces of blood had been removed. She had hitherto been up, but on the 11th I found her in bed, and she said that the night before she thought she would have gone distracted with the pain. The pain had also changed its situation, having extended to the vertex, right temple, cheek-bones and side of face, and the upper part of the side of the neck; in short, it engaged the temporo-facial, facial, and cervico-facial branches of the portio dura of the seventh pair of nerves.

"All these parts were tender to the touch. I had asked her before whether

there was any sore on any part of the head, and had been contented with her assurance that there was not. I now, however, made a careful examination, and found at the right side, about the upper and posterior part of the parietal bone, a small scabby crust; when this was removed, there appeared a small lupoid ulcer, the size of a fourpenny, deep, undermined beneath the edges, the circumference tumid and tender. The true nature of the case now struck me; the present ulcer had gone deep enough to affect the pericranium, and at first one of the posterior superior branches of the seventh nerve, and the branches of the occipital, by the free communication which exists between them; that in a less irritable temperament, the effects of the ulcer might have been purely local, and confined to that part of the nerve engaged in the ulcer; but in her nervous excitable constitution, the morbid irritation had extended to all the ramifications of the nerve. As it was obvious that the only treatment likely to afford relief was that directed to the ulcer, I made a transverse incision through it down to the bone. That night she first got ease, freedom from pain, and sleep. She had no return of the pain, and soon got quite well."

CASE 3.—Ellen Whelan, æt. 40, mother of eight children, suffers dreadfully from pain in the left side of the face, beginning at the upper jaw, above the molars, and going up the side of the head and out through the ear. It generally gets worse at 11 at night, and keeps her awake till day-break. Is rather deaf in the left ear—has had the pain in the face for the last four months. Has taken much medicine, been blistered, and had several teeth drawn without benefit.

"Examining the left ear, I found it blocked up with wax, of extreme hardness. This I removed, not without some pain, and afterwards syringed the ear well. Immediately after this she fainted, and remained in a state of more nearly resembling death than I had ever seen before, for half an hour.

"After recovering from this, not only the deafness, but *all pain in the side of the head and ear, had disappeared.*"

That night she slept well. Next night the pain in the jaw returned. Under blue pill and purgatives for a few days, followed by half a drachm of bark and a scruple of carbonate of iron three times daily, she got quite well in a week.

Mr. Hamilton gives a case of what he considers acute inflammation of the fifth nerve, set to rights by leeches, blistering, and calomel and opium. This leads him to chronic affections of the fifth, or tic douloureux. On this he remarks:—"It has lately been recommended, much too exclusively I think, to combat the disease by what has been called rational constitutional treatment, directed to improve the gastric and hepatic derangements: which derangements it has been attempted to prove are the causes of the majority of what are called idiopathic cases of tic douloureux. Were they really so, this treatment would fail much less frequently than it does. But those who see many examples of painful affections of the fifth or other nerves will allow that in the greater number of instances they cannot be traced to gastric derangement, and that in those cases where the stomach and liver offer much functional disturbance the removal of this does not always, or even generally, cure the neuralgia. In many cases, on the other hand, the gastric derangement, and the general disturbance of most of the organs in the system, follow the pain in the nerve, and in such cases the tongue frequently cleans under the use of opium. Often, however, treatment directed to improve the secretion of the liver and bowels, is the best preparation for tonics or narcotics, and lays the best foundation for a complete cure. Where I conceive this plan most suitable I generally give three or four grains of rhubarb and as many of blue pill at bed-time, with the sulphate of magnesia, sulphuric acid, and infusion of roses, the next morning, for three or four nights and mornings; after this the patient feels better generally, but the pain is usually but

little affected. I now give a drachm of bark and a scruple of carbonate of iron three times a day; and where the pain becomes more severe at night, two grains of the extract of hyosciamus and one of opium, at bed-time, to be repeated in the middle of the night if necessary. This treatment very often succeeds, much more so than beginning with bark, quinine, or carbonate of iron, at once, without any regard to the state of the digestive organs. Local depletion, particularly in the florid, and blistering, are very useful; but in most chronic cases the abstraction of blood aggravates the pain. There are cases, however, in which it is only wasting time, and prolonging the patient's sufferings, not to begin at once with tonics and narcotics, which often effect a rapid and almost unexpected cure."

He details three cases, but the observations are sufficient.

OBSERVATIONS ON SOME MORBID AFFECTIONS OF THE NAIL OF THE GREAT TOE. BY A. COLLES, M.D.*

Any observations on practical subjects from Mr. Colles must command attention. The following merit it.

1. "*Nail growing into the Flesh.*"

Mr. Colles alludes to the barbarous operations recommended and practised for this painful affection. His object is to show that they are unnecessary. He first describes the disorder. We observe, he says, at the angle of junction between the anterior and external edges of the nail, an ulcerated fungus, into which this angle, as also a portion of the outer edge of the nail, are more or less sunken. The colour of the fungus is rather florid, its surface is smooth, the discharge is purulent, in small quantity and tolerably healthy, unless the part have been irritated by too much exercise of the limb or by some external application or local injury; there is little or no surrounding inflammation, no enlargement of the toe, and the pain is in general trifling, unless during exercise, when the weight of the body on the limb causes the nail to press into the soft substance of the fungus, which thus often induces considerable uneasiness and lameness.

The disease evinces little or no tendency to involve the adjoining parts. Dr. Colles doubts, as do we, its disposition to run into malignant onychia.

Passing over the enumeration of various methods of treatment, we give Dr. Colles's own:—

"I proceed as follows: while an assistant with a spatula presses down the fungus, I seize with a forceps (with strong flat blades, like those of the torsion forceps) the edge of that portion of the nail which is to be removed. I then pass a probe with a thin flat extremity beneath the nail, close to the fungus, as high as it can go, taking care to direct it towards the outer edge of the nail; this enables me to judge how far the nail is detached. I then take a strong crooked scissors of a large size, with one sharp pointed blade, this I introduce beneath the nail as far as the probe has directed me; with one stroke of the scissors I then cut off all this detached portion of the nail, while by means of the forceps I draw it away with moderate force; should this attempt fail to remove it, I then re-examine the part with a probe, and again introduce the scissors as high as they can be pushed; a second cut will then complete the separation, and admit of the easy removal of this part of the nail; this second attempt is sometimes attended with a sharp momentary pain, as the point of the scissors often enters a short

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* Dublin Journal, May, 1843.

distance into the sensitive matrix. The portion of detached nail presents no change of texture whatsoever; but a few drops of blood follow this operation. The only dressing required is a small bit of dry lint which is to be pressed firmly with the probe between the fungus and the edge of the nail. In a few hours the toe is free from pain, and the patient can walk without any lameness or uneasiness in three or four days after the operation. The dressing continues perfectly dry, and needs not to be changed until the fourth day; at this time the fungus will be found much reduced in size, perfectly dry, and of a firmer consistence: a small bit of lint is to be re-applied as before, it should not, however, be pressed down, so firmly as at the first dressing. In the course of ten or fifteen days the fungus will have entirely disappeared, and the parts be restored to a healthy state. I have never found it necessary to apply the olive-shaped cautery to destroy the fungus, as described by Dupuytren. In the course of this treatment I also advise the patient (in compliance with the rules laid down by authors) to scrape the upper and outer surface of the nail with a sharp penknife, or with a bit of glass, an instruction, however, which the patient neglects, as soon as he feels himself relieved from pain.

"It affords me much gratification to be enabled to state, that in no instance have I met with a case of relapse, after this operation has been efficiently performed. But the result of the operation itself is not in all cases so successful as I have hitherto represented, for in some instances, four or five days after the operation, the patient will complain of some uneasiness in the toe, when we shall find, on examination, that the dressing is moistened with a little discharge, and that a small portion of a whitish substance, like soft and swollen leather, is rising up through the fungus. This substance, may be, is regarded as a sort of accessory ungual filament, arising close to the original nail from the anterior and outer border of its matrix, and which is now altered in texture and direction; this filament is so soft, that it breaks and tears, if caught by the common dissecting forceps; in order, therefore to remove it (which it is necessary to do,) we must seize it with the torsion forceps, and excise it with one cut of the scissors, passed well and fully beneath it; the lint dressing is to be re-applied, in the manner before mentioned, and the case will proceed without further interruption to a perfect cure."

We have been for some years in the habit of adopting a nearly similar proceeding with complete success. But there are some slight differences between our method and that of Dr. Colles.

Supposing the fungus to surmount, as it generally does, the border of the nail, we first touch it freely with the nitrate of silver. Then, having previously had the nail well soaked and pared, we insinuate under it the flat end of an eyed probe, and turn it up. If that can be effected we cut off the reverted edge with a proper pair of scissors, and proceed with the probe and forceps to remove all the remainder of the nail which covers the unsound matrix, or fungus, and is *detached*. If the edge of the nail is not turned up by the probe we gently introduce a piece of lint beneath it, and leave it until the following day. The nail being again soaked and scraped, the portion over the lint can now be cut away, and a fresh portion of lint introduced farther under the nail, while, if necessary, the fungus may again be touched with the caustic. By proceeding in this way the portion of the nail which interferes with the fungus may in two or three days be removed, with scarcely the slightest pain to the patient. The caustic is advantageous in two ways—first, it destroys or greatly diminishes the sensibility of the fungus—and, secondly, it destroys its projection which would interfere with the other parts of the treatment.

If the nail is very loose we may proceed in Dr. Colles's manner. This we have also done on several occasions.

Dr. Colles goes on to state:—

"There is another morbid affection, which occasionally engages the anterior and

inner angle of the great toe nail, and which causes considerable lameness and uneasiness, particularly on pressure; this affection is often mistaken for an attack of gout, particularly in those persons where such an attack may be expected, or even desired. In this disease there is no swelling or redness; but pain, on pressure, at the anterior and internal angle of the nail. On a close examination of this spot, we find that this angle rests on a hard, white mass of laminated, horny cuticle, which we can easily remove in bran-like scales, when we shall see a small cup-like cavity, without any ulceration or disease. The ungual angle appears thick and bulbous opposite this point, and the pain is caused by its pressing against this mass. This affection is easily cured, by scraping away all this substance, and excising the bulbous angle of the nail, and then interposing a little lint. Attention is required, for some little time, to remove any unhealthy growth of the cuticle or nail, and to secure the patient from any further uneasiness. Finally, I may remark, I have never seen this disease engage the outer angle, neither have I seen that last described engage the inner angle of the toe nail."

2. *Onychia Maligna.*

Dr. Colles gives a succinct, but good account of this severe disease. This however, we omit. He goes on to say, that all modern authors concur in representing as indispensable the removal of the diseased matrix. He observes:—

"I admit that the operation of the complete removal of the entire of this diseased matrix does effect the cure, in a very short space of time, provided the bone or joint is not diseased (in which case, amputation is inevitable), and that, subsequently, rest and simple dressing will alone accomplish the healing process, the place of the nail being supplied by a dense, hard skin. But still this operation is not without objection; it is always attended with severe pain, and which sometimes continues for many hours; it also too frequently happens, that the disease returns in some one spot or other, owing to the matrix not having been wholly eradicated, which indeed is often extremely difficult to do; for the shape of the toe is so bulbous, and so deformed, the textures so changed and so condensed by chronic inflammation, and the edges of the ulcer are so raised over the part to be removed, that even an anatomist cannot easily recognize the relations of the several tissues involved in the disease, or ascertain the exact extent of the substance to be excised: during the operation also, the flow of blood is so profuse, as to prevent the operator distinguishing one texture from another; accordingly, it occasionally happens, that the patient, having enjoyed an immunity from pain for some days after the operation, becomes alarmed by feeling a slight return of his former uneasiness, on any exercise of the limb, or on any pressure on some particular spot, generally on one of the angles of the original ulcer; and the surgeon, on a careful examination of this spot, finds there is still a little ulceration, and a fresh production of that ungual growth, already described as abnormal both in texture and in direction, and which indicates the persistence of some of the diseased matrix. This will again act as a foreign body, exciting constant irritation, and will soon lead to a renewal of all his former sufferings, and for the removal of which, the excision of this morbid tissue must be repeated. Any surgeon who has experienced this disappointment can, I am confident, bear testimony to the horror with which the patient has contemplated, and the reluctance with which he has submitted to, a repetition of this peculiarly painful operation. I have known it necessary to repeat this even a third time; and therefore, whenever these secondary operations become necessary, I should remind the surgeon, that, to insure success, he must cut much more deeply and extensively than he might at first suppose to be necessary."

Dr. Colles, however, thinks that the disease is curable in a less severe manner. The following plan has been in his hands, as yet, invariably successful.

"I confine the patient to bed, and direct a poultice to the toe for two or three

days; I then cleanse the ulcer carefully, by directing on it, from some height, a small stream of tepid water from a sponge; I next cut away as much of the loose nail as I can, without paining or irritating the sensitive surface around, and then I fumigate the part by means of the mercurial candle, containing 3j. of the hydr. sulphuretum rubrum (olim cinnabar) to two ounces of wax. This fumigation is to be applied night and morning, and, after each, the toe should be gently enveloped in lint or linen, lightly spread with ung. spermaceti. In four or five days the patient will express himself as considerably relieved; the discharge from the ulcer will be found of a healthy, purulent character, and the appearance of the whole part much more favourable. The fumigation is still to be persevered in, and all projecting portions of the nail to be closely cut: I consider this latter direction as very essential, as thereby the mercurial fumes can have more free access to the surface of the ulcer. In proportion as the ulcer improves, it is interesting to observe, so does the condition of the growing nail; it acquires not only its natural firm and horny consistence, but also assumes its proper horizontal direction. For some time after the general surface of the ulcer has been healed, there still remain small spots of ulceration, generally at the angles, around some white germs of new nail; against these points, the full force of the mercurial vapour should be directed; this can be effected by adding a small conical ivory tube to the funnel. I attribute much of the success of this treatment to the use of the mercurial candle, in preference to fumigation in the ordinary mode. I must observe, that during this course of treatment, the patient must absolutely abstain from walking, or even standing on the affected limb; exercise but for a single day will counterbalance all the amendment produced by a week's rest and fumigation. In the cases which I have thus treated, I have had no recourse to any constitutional treatment, or to any peculiar regimen; no doubt, cases must occur in which there will be derangement of the general health, and which will require suitable constitutional remedies, before we can expect to cure the local disease by mere local applications. I make no doubt that this ulceration may sometimes arise from, or be so intimately connected with some constitutional derangement, as to be incurable without the aid of constitutional treatment. Mr. Wardrop, in his paper above alluded to, has recommended a cautious and judicious use of mercury, and has recorded some instances of its success."

In a case of onychia maligna lately under our care in the hospital, we effected a complete cure, although the last phalanx was bare, by means of sarsaparilla and the oxymuriate of mercury, conjoined with poultices of bread and the aqueous solution of opium. We believe that in many cases constitutional and soothing local treatment will be successful.

THE ZOIST.

SUCH is the title of a new Journal, "a Journal of Cerebral Physiology and Mesmerism, and their applications to Human Welfare." How the "Cerebral Physiologists" will like this union, we will not undertake to say, but we suspect that the better and the larger portion of them have little stomach for the match.

The "Zoist" is ornamented with a neat vignette representing a venerable man, intended, no doubt, for Dr. Elliotson, poring over a volume opened on his knee, while two females of prepossessing mien, but remarkably loose habits, support the Doctor upon either side, and compose a striking and interesting group. The ladies, of course, are the Okeys, and though we are aware that such gifted individuals are far above what are vulgarly considered the decencies of life, yet we would venture, with great diffidence, to hint, that their petticoats are *rather* scant

By a singular coincidence, this Journal of Mesmerism starts upon the first of April.

The Prospectus informs us that the Editors of the Zoist "will endeavour to furnish a medium for the freest expression of thought on questions of social, moral, and intellectual progress. In giving an opinion on important questions, they will not be influenced by external movements, either popular or the reverse. They claim perfect independence of thought, but will be guided in the expression of it by the unerring principles of their science. They aim to be truth-seekers, and they consider it to be their duty to promulgate the 'truth of facts,' impelled by the conviction that all truths are subservient to the happiness of mankind." They talk it bravely, but "fine words," says the proverb, "butter no parsnips." The "unerring principles" of Mesmerism are, perhaps, appropriately employed to gauge the independence of thought, themselves being independent of everything like thought. But to proceed.

"The discovery of a new truth gives to the philosopher intense delight. The science of MESMERISM is a new physiological truth of *incalculable* value and importance; and, though sneered at by the pseudo-philosophers of the day, there is not the least certainty that it presents the only avenue through which is discernible a ray of hope that the more intricate phenomena of the nervous system,—of Life,—will ever be revealed to man. Already has it established its claim to be considered a most potent remedy in the cure of disease; already enabled the knife of the operator to traverse and divide the living fibre unfelt by the patient. If such are the results of its infancy, what may not its maturity bring forth? Let us pause for a moment to survey our position. An acute susceptibility of pain has been diffused throughout the human body to warn man of injury, and hitherto it has been deemed a necessary consequence that suffering should follow the violation of its integrity. Behold, in a painless operation during the trance, the arrest of an important function at the will of man! and for the purposes of beneficence,—a result which a few years since it would have been considered madness to conjecture. Is not this a triumph justly deserving the name of glorious, quickening the pulse in the bosom of philanthropy, and unfolding bright visions of the future to the gladdened eye of the well-wisher of his race? Shall *an era occur in the progress of man*, and the tidings fall on the cold ear of apathy and indifference?"

It is quite clear that the Zoists intend to be fine writers. It is not often, in these dull times, one meets with anything so inspiriting as the wind up of this passage. Visions and eras and gladdened eyes and cold ears all in five lines, are not things to be sneezed at. The mode of address, however, is more taking than novel. The "Behold" &c. is evidently an imitation of the apostrophic or show-man style. "Valk up, ladies and gentlemen, valk up, and see this ere vonderful halligatur, vot measures fifteen feet from the snout to the tail, and seventeen feet from the tail to the snout." The showman certainly may complain of plagiarism, but after all, *his* wonders are not fit to hold a candle to the Zoist's, for the world scarcely dreams of what is coming.

"The extraordinary phenomena elicited during the excitation of the cerebral organs by means of Mesmerism, and establishing a connexion between the two sciences, constitute another department demanding the most serious attention and investigation, and the ultimate results of which may transcend in value and utility all that man has yet dared to hope for from science. Let what many facts render probable be once established, viz., that this state of increased activity can be rendered permanent and carried into the natural state, and who does not catch a glance of a mighty engine for man's regeneration, vast in its power and unlimited in its application, rivalling in morals the effects of steam in mechanics."

Steam! Baugh. A trip to China and back in an afternoon by the aërial carriage is nothing to this. Look at its applications. We take a country bumpkin —make some passes attractive, repulsive, and centrifugal, and winding up with

a few corkscrew touches over his bump of constructiveness, we qualify him architecturally to that degree, that Brindley would dilute into "treble skimm'd sky blue" beside him, and he might produce an impromptu of a pump that would astonish even Mr. Pecksniff. So, with a little management, we could change a poltroon into a hero, a booby into a poet of the first water, and in short "draw out" their talents from persons who never had any. Extraordinary science, fit to be ranked with astrology and alchemy, and the gentle craft of palmistry, all doubted as they are and snubbed in these unphilosophical days.

The "Zoist," if he does not aspire to the crown of martyrdom, anticipates it:

"The science of Cerebral Physiology experienced strong opposition before even its first principles were recognized, or the truth of its most obvious facts conceded. The science of Mesmerism has been destined to pass through the same ordeal. There is one curious and melancholy feature which deserves especial notice, and which proves how little Cerebral Physiologists have profited by the difficulties they encountered during the infancy of their own science. Men of science denounced Gall as an enthusiast and visionary, and proclaimed his facts to be fallacious. Men of science and even Cerebral Physiologists denounce him who is convinced by his senses of the truth of Mesmerism as an enthusiast and visionary, and proclaim the extraordinary phenomena which are developed in the trance to be gross impositions. Thus the very course which Cerebral Physiologists condemn in the opponents of their own views, many of them are the first to adopt on the proclamation of a new and startling truth; and this is the more extraordinary, because many of the phenomena illustrate in a most beautiful manner the excited action of the cerebral organs. How great the difference between theory and practice! They believe in a philosophy which teaches them an opposite course of conduct, and yet feel not its influence!

"However, those who are investigating nature and recording facts know that in a short time opposition must cease, and they turn from the gloomy to the bright side of the picture and contemplate in the distance the results of their labours. They look for their reward in the plentiful harvests of the future, rather than in the reapings and gleanings of the present or the past. 'Glorious, heroic, fruitful for his own Time and for all Time, and all Eternity, is the constant speaker and doer of truth.' The assertor of truth may be crushed and we may breathe a sigh over the martyr as he passes from the field of his labours,—ignorance and prejudice may for a time reign triumphant, and the abettors of sloth and selfishness be considered the great, the good, and the wise,—but Time rolls on, and Reason will assert her dominion."

It certainly does seem, at first sight, ungrateful on the part of the phrenologists, to disbelieve in Mesmerism, seeing what disbelief was long extended to themselves. But this may be said in their defence, that if the mere circumstance of having met with incredulity, is to constitute a reason why they should never exhibit any, they may as well proclaim belief in any thing and every thing The bottle conjurer may employ the same argument, and utter the same complaint—the directors of the aërial steam carriage company may consider themselves ill used individuals—in short, every description of humbug must be welcomed with a bow, and no questions asked.

This is one of the fallacies with which enthusiasts deceive thsmselves. Because new truths have met with opposition on their first promulgation, therefore every thing new that is opposed is true, and all opposition to what is new is bigotry. The persecution of Galileo has been the ruin and the consolation of many a projector—the neglect of Milton has been the undoing of many a rhymester—and the discredit shown to Harvey has comforted, if it has not generated a host of theorists. This is the way in which the followers of Johanna Southcote, of Hôhenloë, and of Irving, steeled themselves against the derision of the world. The Saviour was mocked—so were they; their mission was conse-

quently, as divine as the Saviour's. The moralist may deem this a happy dispensation, the very hopelessness of the delusion constituting its alleviation; and perhaps, after all, a fool's paradise is not a bad one.

If the Zoist hugs himself with the fond idea, that his science and himself will be famous by-and-bye, well and good. It is a comfortable hallucination, and he does right to make the most of it. These pleasures of imagination are probably all he will ever get; and it were a pity to deprive him of them. But, like his "science," they *are* imagination, and one airy nothing will dissolve away with the other.

We laugh at the folly, we pity the madness of the Mesmerists. Many of them are neither better nor worse than arrant charlatans—more are weak dupes of knaves or of themselves—and a few are sincere, high-principled fanatics, led away by a love of the extravagant and marvellous, and trying very earnestly, but with small success, to hold the eel of philosophy by the tail.

The Editors of the Zoist promise that:—

"They will bestow great attention upon the practical department of the two sciences which they have undertaken to cultivate, but at the same time will not be regardless of their vivifying power. They will not forget that man, Eternal Man, is the theme; and, while they survey his past history and point out how his best interests have been neglected, they will indicate the manner in which these two sciences may be made subservient to the great end in view,—the progressive improvement and increasing happiness of the race."

We should be sorry to dispute the sincerity of these declarations, nay, we do believe that these gentlemen are actuated by the feelings they profess. But however estimable such sentiments may be, and however we may respect an earnest aspiration for the improvement of mankind, we must recollect that such sentiments and such desires, if not regulated by a sound and cautious judgment, run into enthusiasm, visionary at the best, and, perhaps, dangerous. In science, there can be no compromise with truth. Whatever leads to its establishment must be encouraged, whatever deviates from it, however amiable the feelings of the individual, must be sternly and resolutely reprobated. For our parts we view Mesmerism as a ludicrous, if not a mischievous, delusion; and, without regard to persons, it should be laughed at and put down.

ON THE TREATMENT OF CYNANCHE TONSILLARIS. BY DR. ROBERTSON.*

Surprised at the number of deaths which occurred in cases of croup under the usual treatment, Dr. Robertson determined to try a different plan of which the following is a sketch.

If the child is stout, an antimonial emetic is to be instantly administered; if young, or weak, or of a delicate constitution, a large proportion of ipecacuanha is given with the tartrate. Warm water ordered to be in readiness for a bath, if required. The moment the emetic has ceased acting, a stimulating liniment is applied to the neck and upper part of the chest, by moistening a piece of fine flannel, lint, or cotton wadding with the stimulant. These liniments vary according to the appearance of the skin, age of the patient, &c. A very good composition is about equal parts of oil of turpentine, compound camphor liniment, and olive oil: if the child is young, less turpentine. Occasionally iodine or ammoniacal preparations are employed: or tincture of cantharides: mustard sometimes, but its effects on the skin are often severe. If it does not redden

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* Lancet, May 27.

the skin and cause acute pain in from two to five minutes, it must be strengthened. When once it acts freely, a very short time will answer. The inflammation should extend from the top of the thyroid cartilage to the top of the sternum, two or three inches broad above, and wider below. As soon as small vesicles occur, and a very red skin, with the papillæ much enlarged, the rubefacient should be removed, and replaced by a light soft poultice of bread and milk, or water, and some oil or lard, which must be changed or cleaned occasionally. The patient to be soothed and pleased, by trying to play with it, instead of crying or being dull; the less use they make of the nasal organs the better; a little liquorice to keep in the mouth, and if the cough is troublesome, pectoral mixture, with a very small quantity of opiate preparation, either compound tincture of camphor or one of the salts of morphia. Care must be taken in administering these, not to give a very large dose, or any if there is not much irritation; the stimulation of the liniment is often of service. Soon after the stomach has recovered from the effects of the emetic, calomel is given and is repeated every two, four, or six hours, and in doses proportionate to the age and strength of the child, narrowly watching the gums. When the least swelling or redness of the gums or throat is observed, stop for some hours and watch its constitutional effects. The bowels to be freely opened with castor oil, rhubarb, tartrate of potass, or some such medicine. If the skin is dry and hot, a warm bath is a good application; but if the patient's surface is moist, and itself weak or languid, we must be cautious in its application, taking care to cover the body the moment he is taken out, and instantly dry it with towels. If the medicines and applications do not produce the desired effect, they must be changed and others of somewhat a similar kind administered. Should any other disease, local or constitutional, be present, or come on during the attack, it must be properly attended to; proper temperature, &c. being adopted all the time.

During convalescence, the greatest care and attention must be paid to the patient: no exposure to cold or damp or any sudden transition of temperature: the neck, chest and feet to be kept warm, and the diet simple: air and exercise in the arms, walking, or in a carriage, according to circumstances.

Under this treatment, Dr. Robertson states that very few patients have been lost.

On Polypi of the Rectum in Young Children. By Dr. Gigon.*

After relating six cases of this affection, three of which were under his own care, and three under the charge of his colleague, M. Brun, Dr. Gigon makes the following remarks.

Nature of the Tumours.—These are stated to be fleshy, red, resembling a large cherry deprived of its epidermis, and with a bleeding surface, suspended by a narrow pedicle or stalk. Cut in pieces, in was found to be fleshy, of variable consistence, but usually having about the firmness of a portion of liver. To the naked eye there was no appearance of vessels; nothing like fibres, the mass was compact; in one case, however, by the aid of the microscope, some vascular traces were discovered, while, in another, in which the disease had lasted for a long time, a well-marked fibrous disposition was seen. In other respects, there was no difference of aspect in the six cases, there was always a globular tumour, of blood-red colour, and varying from the size of a cherry to that of a nut.

The pedicles were membranous, smooth, soft, of a grayish colour, and of the size of a small pea: they did not appear to be at all vascular, and their implant-

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* D'Expérience, June 1st, 1843.

ation took place at a height varying from some millimetres to six centimetres above the anus; they were insensible and endowed with the moderate powers of resistance; in one of these cases, the pedicle was not sufficiently firm to support the ligature, but broke, without giving rise to any consecutive hæmorrhage; this would, at first sight, appear to prove that the pedicle was not vascular, and that the discharge of blood which so often accompanies this disease comes from the rectum irritated by the presence of the polypus; this was, however, afterwards shewn not to be the case, because in one instance, after applying a ligature to the polypus, blood no longer exuded, notwithstanding the presence of the tumour in the intestine, and, in another, the excision of the pedicle was followed by severe hæmorrhage, proving that it is to the vessels which traverse the pedicle that the sanguineous exudations and the hæmorrhages are due.

Two other species of polypous tumours of the rectum in infancy have already been noted, viz. mucous tumours, formed by the mucous membrane of the rectum, strangulated and distended, as observed by M. Stolz; vegetant tumours, as pointed out by M. Boyer, and, finally, fleshy pediculated tumours, as shewn in the present paper.

Symptoms and Signs.—The commencement of these tumours is attended with much obscurity; the rectal mucous membrane with too little sensibility to allow a body of such small size to occasion any sensation whatever. After some time, when the tumour has become well developed, the symptom most constantly observed is, an exudation, or even a flow of blood by the anus; the fæcal matters are then stained, and sometimes bathed in, and softened by pure blood, without any admixture of mucus. When this bloody discharge exists, and especially when it has continued for some time, without the presence of any general symptom, and without there being any reason for referring to some severe lesion of the intestine, the parents ought to be asked whether, when the patient goes to the water-closet, any reddish body appears at the orifice of the anus; if this has been observed, there is no longer any doubt, the nature of the disease is known; if not, the patient may be made to strain, the tumour will then usually project externally.

In some cases, in consequence of the shortness of the pedicle, or from its being attached very high up, the polypus cannot be brought into view, the finger may then be introduced without any difficulty, even in very young children, or the speculum ani may be employed.

The diseases with which this affection may possibly be confounded are, dysentery, hæmorrhoids, and prolapsus of the rectum.

From dysentery it may be distinguished by the absence of glairy matter, of abdominal pain, fever, heat, and, in fact, of every symptom with the exception of the presence of loose fæcal matter stained with blood.

From piles it may be distinguished by the colour of the tumour and its place of insertion; the age of the patient will also serve as a diagnostic mark.

With prolapsus of the rectum, this disease has been occasionally confounded; on examining the part, however, you find in prolapsus an opening in the centre of the tumour by which the fæcal matter escapes, whilst in polypus, the fæces escape by the side; in fact, a careful examination can leave no doubt upon the subject.

Supposing these tumours left to themselves, what would happen? Would they attain an indefinite size? M. Gigon is of opinion that they would not. The largest which he has seen was about the size of a nut, and in that case the discharge of blood had existed for upwards of a year. In some cases, these tumours may be detached spontaneously; the pedicle being ruptured during the passage of hardened fæces, or the polypus may be protruded, and finally separated by the action of the sphincter. However the disease is one which ought not to be

neglected, especially when the discharge of blood is abundant, as emaciation, hectic fever, marasmus may ensue.

Treatment.—The treatment to be employed in these cases, is at once simple and successful; the ligature must be had recourse to with or without section of the pedicle. Nothing is more simple than this little operation. The little patient is placed on his stomach, and made to strain till the tumour projects externally, it is then seized with a pair of forceps and drawn outwards; this may be easily done, for the mucous membrane is so lax at this age that very slight traction will enable you to get at the pedicle. When the polypus is thus drawn out it is somewhat difficult to distinguish where the pedicle ends, and where the mucous membrane begins, on account of the colour being the same; it is necessary, however, to pay some attention to this point in order that too much of the mucous membrane may not be included in the ligature, as this would be attended with inconvenience. A waxed thread is then passed round the pedicle, but must not be tied very tightly for fear of cutting through the pedicle. It is better then to return the whole into the rectum, without cutting it off below the ligature, as in one case in which excision was practised some hæmorrhage took place subsequently. The tumour left to itself in the rectum falls off on the second or third day, and is discharged at stool. In none of the cases observed by M. Gigon, was there any pain from the application of the ligature, or any accident after the operation. On the contrary, all the bad symptoms, such as the discharge of blood, loss of appetite, emaciation, &c. speedily disappeared.

CLIMATE OF VAN DIEMAN'S LAND.*

Van Dieman's Land, like most newly-colonised countries, has been represented as, in climate, an earthly paradise, and lauded as enjoying immunity from that great scourge of the human race—consumption. Mr. Power, Assistant-surgeon, 5th Dragoon Guards, has resided in the colony for three years, and visited every part of it where settlement has been made. He observes:—

"Van Dieman's Land is situated between the degrees, 41 and 44 south latitude, and 144° and 149° east longitude. This situation, though in fact ten degrees nearer the equator than Great Britain, affords a very similar climate in point of temperature,† to that which is experienced in the latter place; for, though more immediately under the influence of the sun's heat, the effect to be expected from such a locality is counter-balanced by the winds, which blowing uninterruptedly over the ocean from the perpetually frozen regions of the south, arrive there, without having their coldness modified, as occurs in the northern hemisphere, by a transit over large tracts of land. In this way a medium temperature, a kind of balance as it were, is established, and extremes of heat or cold seldom continue for more than a very short period.

"This constant struggle between the cold winds of the south, and the heated air of the land, constitutes the premises from which has been inferred the great equability of temperature supposed by strangers to exist in that country; but, though the inference is just in general terms, experience proves that it is not so correct when examined more in detail. Thus, it may be observed, that between the *different seasons*, the variation is comparatively trifling, the thermometer

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* Dublin Journal, March, 1843.

† The thermometer, one season with another, ranges from about 42° to 74° in the shade; but when a hot wind blows, it sometimes rises suddenly as high as 108° or 110° in the shade.

frequently standing as high in winter as it does in summer, and *vice versa*; but at *all* seasons, the residents, particularly those living near the coast, are liable on *the same day* to experience the extreme heat of summer and the cold of winter; the change also frequently takes place, with a rapidity and suddenness which defies preparation, and is consequently extremely trying to invalids, or those who are of a naturally delicate constitution. This change is produced by the prevalence or otherwise of the sea-breeze, and its greater or less intensity; and the latter is again dependent on local causes, the consideration of which, it is deemed unnecessary to enter upon here."

Mornings and evenings are the coldest portions of the 24 hours. In summer about 10 or 11 a. m. the heat may be oppressive. In a single hour, there may be a cold sharp sea-breeze, searching the body, and setting up new, or reviving old rheumatisms. In an hour or two, the sea-breeze may again die away, and the close sultry weather return. Finally evening brings another change, unless, which is rare, there is a hot wind. These extremes are not felt so much in the interior of the country. The hot winds seem to be confined to the spring and commencement of the summer quarter, and are mostly from the north or north-west. They are usually mild, but occasionally one blights every thing over which it passes. They seldom last more than a few hours, when a heavy fall of rain follows.

Snow never lies in the valleys—the slight frosts never survive the morning. The atmosphere during nearly the entire year is clear and the air rarefied. Animal spirits, are consequently exhilarated.

Pulmonary consumption, though not rife, *does* shew itself in Van Dieman's Land. It has committed havoc with the aborigines. Speaking of persons who had the seeds of the disease formed before leaving Britain, Mr. Power observes:

"It is worthy of remark, however, with respect to the latter cases that so far from being benefited by the change of climate, voyage, &c., to which they have been thus subjected, the course and development of the disease seems to be considerably accelerated, and a fatal termination to ensue at a much earlier period than would probably have occurred had the sufferer remained quietly at home. This point is mentioned chiefly because sea voyages have been recommended, on very high authority, in incipient or threatened cases of phthisis pulmonalis; no doubt this advice was intended to apply only to voyages made in the temperate zones, and the effects of a tedious voyage, no matter how perfect the accommodation on board, through the high latitudes south of the Cape of Good Hope, where during the greater part of the year the weather is cold, wet, and foggy, were not contemplated."

Whooping-cough, and the exanthemata present themselves, but mildly. The climate *may* assist female fecundity. Rheumatism is common and obstinate. The disease that has proved most fatal, of late years, is fever. From its peculiarities, it has received the name of "the Colonial Fever."

"Its commencement is very insidious, and all the symptoms, at that stage, extremely mild. If allowed to run its course without treatment, it not unfrequently happens that the fever may be ten days or more in existence, before the patient or his friends become aware of the serious nature of his indisposition; after that period, however, the accession of alarming symptoms is in general very rapid. As in typhus, the tongue becomes black, dry and shrivelled; but the occurrence of petechiæ, or similar eruptions, is rather rare than otherwise. Head symptoms mostly set in very early in this stage, and are frequently complicated with such derangement of the bowels, as would lead to the supposition that extensive organic disease existed in the intestinal canal. In the majority of cases, however, where *post mortem* examinations have been made, the traces even of ordinary inflammation, in those situations, have been found to be so trifling, as to afford by no means a satisfactory explanation for the symptoms existing during life. But, the point to which perhaps the stranger's attention should be most

impressively directed, is the frequent recurrence of relapses, and the extreme danger which attends them. Some time after the fever has apparently quite subsided, convalescence been well established, and the patient gradually gaining strength, it may be observed that the pulse still remains five or six beats in the minute more frequent than natural. Under ordinary circumstances, this, viewed merely as a symptom of debility, might cause little uneasiness. In the colonial fever, however, it is necessary to watch it with the closest attention, for the patient can never be considered safe so long as such a state of pulse continues."

NOTES ON URINARY DISEASES. BY J. ALDRIDGE, M.D.*

Dr. Aldridge offers some hints which may be worth taking.

1. *Portal System of the Kidney.*

Dr. Aldridge alludes to the researches of Mr. Bowman, on the Structure of the Kidney—researches which, if established, would prove a strong analogy between that gland and the liver—viz. capillary tufts on the terminal branches of the arteries—efferent vessels from those tufts—and a second set of capillaries between those efferent vessels and the veins. However ingenious these views may be, we confess they do not carry conviction to our minds, and whether we look at the observations, the analogies, or the hypotheses of Mr. Bowman, we are alike unsatisfied. But let that pass.

2. *Lithic Acid Deposits.*

The amorphous, or powdery, lithic acid deposit, can often be only distinguished from the crystalline by the microscope, yet the distinction is important. A copious deposition of lithates from the urine is a thing of minor consequence, such deposits in general corresponding to a very concentrated urine, in which there is not only an excess of urates, but likewise of urea and lactic acid; this excess depending, not upon an increase of solid excretion, but most usually on a deficiency of water.

"Super-lithate of ammonia (which, I believe, forms the bulk of these precipitates) is much more soluble in hot than in cold water; and thus, when a concentrated hot solution is permitted to cool, the excess becomes deposited. If transparent urine of a specific gravity 1.018 be evaporated gently to 1.028, and then permitted to cool, a cloud of lithates will deposit; and it is plain that the effect would be precisely the same, if, instead of removing some of the water, that portion had never been added. Urine evaporated in the manner described, would have not only the lithates, but the urea, lactic acid, and other constituents, also proportionately increased. Now this is precisely the character of the urine, from which a sediment of lithates ordinarily subsides."

Dr. Aldridge shews that the disorders in which this condition of urine obtains, are often of an inflammatory character. "We perceive them accompanying chronic dyspepsia, and other cases where we have reason to think there is a subacute inflammation of some part of the intestinal canal; we see them in fevers both continued and intermitting; in rheumatism and gout; after a debauch in wine, &c.; in all these cases theory would lead us to suppose the existence of an irritation in the kidneys. Again we find lithic acid deposits in dropsies depending on diseases of the heart and liver; in excessive secretions from any surface, whether profuse perspiration or diarrhœa; thus I have known persons whose urine threw down lithates as long as they were confined to bed, which

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* Dublin Journal, March, 1843.

disappeared when they were able to get up and walk about: and many persons perceive a deposit in their water during Summer, but not in Winter: now, in all those cases of flux or dropsy, there exists a derivation from the kidneys. May we not conclude, that lithates are deposited from the urine, when the quantity of water secreted by the kidneys become diminished, either by an irritation or by a counter-derivation, in obedience to well-ascertained physiological laws!"

The opposite state of urine to that already dwelt on furnishes important diagnostic indications. Dr. Aldridge examined a case, in which from the general symptoms and stethoscopic signs, he pronounced on the existence of acute catarrh. But his attention being directed to the urine, he found this very pale and transparent. He re-examined the patient, and found she had only hysteria.

Crystallised Lithic Acid, mixed frequently with blood globules, in an albuminous and very acid urine, Dr. A. believes, with M. Rayer, to be the evidence of gouty nephritis.

3. *Alkalinity of the Urine.*

Dr. Aldridge's account of the chemical changes whereby urine becomes alkaline is so simple that we quote it:

"Urea is a compound of the radical of carbonic acid (carbonic oxide) with the radical of ammonia (amidogene = N. H_2); when urea ferments, water becomes decomposed, and its elements uniting with the carbonic oxide and amidogene respectively, carbonate of ammonia is generated. Part of the ammonia formed neutralizes the lactic acid, to which urine usually owes its acidity; another portion unites with the biphosphate of magnesia, forming *ammoniacal magnesian phosphate*, and if the fermentation proceeds to any considerable extent, free carbonate of ammonia, producing effervescence upon the addition of acids, exists in the liquid.

The ferment that gives urea the disposition to decompose is usually the extractive matter of the urine; but pus and mucus are more powerful ferments still. In a given case of alkaline urine, the practitioner would first inquire, of course, if the patient has been taking alkalies, earths, their carbonates, the salts of these bases with the vegetable acids, or if he had been salivated by mercury. He would then ascertain if the urine was retained in the bladder. Dr. Aldridge does not believe that the urine ever becomes alkaline from putrefaction in the bladder, unless when mixed with pus or mucus, the globules of blood, if they act at all, operating very feebly as a ferment.

When the urine is *secreted* either fairly acid, or neutral, M. Rayer thinks there is inflammation, either acute or chronic, of the cortical and tubular substances of the kidneys. Every opportunity has been seized, at St. Vincent's Hospital, of testing the accuracy of this opinion.

"Among numerous instances, I may allude to the following: A case of essential hæmaturia, under the care of Mr. O'Ferrall, in the course of which repeated attacks of nephritis occurred; these were diagnosed from the supervention of shivering, pains, and deep-seated tenderness in the region of the kidneys, tendency to vomiting, &c.; in each attack the urine became neutral, and cupping the loins as regularly restored its acidity, at the same time that the other symptoms were removed. Cases of obstinate stricture, in which the same phenomena frequently occurred: A woman who laboured under spinal disease, accompanied by catarrh of the bladder, and alkalinity of the urine, was treated by cupping, followed by setons over each kidney; the urine ceased to be alkaline long before the purulent discharge was diminished. In this case it deserves to be noted, that when the urine gained its acidity, she could retain it much longer than before. Another woman whose urine was very alkaline and deposited a mortar-like sediment, was examined after death; the bladder was the seat of

numerous fungoid growths; but the kidneys were atrophied, firm, very adherent to their tunics, very pale in some parts, in others with greenish-brown depressions, at which situations the cortical substance was absorbed, the bases of the tubular fasciculi being in contact with the fibrous tunic: these are the appearances described by M. Rayer as occurring in subacute nephritis. In fine, the weight of evidence which has presented itself to us at St. Vincent's Hospital, has fully borne out the truth of the proposition advanced by the eminent pathologist I have mentioned."

Dr. Aldridge has found the fluid in the vesicles of herpes, and in the bullæ of pemphigus invariably alkaline.

4. *The Phosphatic Diathesis.*

Dr. Aldridge observes that this complaint has been admirably described and lamentably misunderstood. It has been considered as a result of cachexia; its essence to consist in a super-secretion of the urinary phosphates; and its treatment in the regulation of diet, the exhibition of opium, and the encouragement of *hope*, a hope too seldom realized. But Dr. Aldridge is prepared to show, that, in place of there being an increased secretion of the phosphates in this disease, the quantity of these salts in the urine is for the most part diminished. Dr. Aldridge presents us with a Table substantiating this position. We find, he says, by it that in place of being increased, the quantity of phosphates in the urine, is actually, generally, diminished in the so-called phosphatic diathesis. The essential character of this kind of urine is not an excess of phosphates, but a neutral or feebly acid condition; and the cause of its tendency to alkalinity depends upon an existing subacute nephritis.

"A young man," he continues, "has stricture, or an old man has enlarged prostate or calculus, and constant retention, or friction, produces inflammation of the urinary passages; and this inflammation spreads along the ureters to the kidneys, to their cortical and tubular substances; and in consequence of this inflammation of the secreting substance, the urine becomes alkaline. Well, this spread of inflammation may be accompanied with fever, and frequent rigours, tendency to vomiting, &c.; and the case is called one of urinary fever; or, it may go on slowly, the fever of a hectic character, some deep-seated tenderness in one or both renal regions; weakness approaching to paralysis of the inferior extremities, much emaciation, and low spirits; and the patient is said to labour under the phosphatic diathesis. However, in both cases, the real disease is a *nephritis*—in the first, acute—in the second, subacute. In the former, the urine besides being neutral or alkaline, and depositing phosphates, is high-coloured, containing blood, and often very scanty. In the latter, this secretion is pale, and is frequently more abundant than natural. But in both, the alkalinity is the essential character of the urine, and not, the circumstance of its containing phosphates in suspension.

"It is absurd, therefore, to talk of this as phosphatic urine and of the disease which it signifies as a phosphatic diathesis.—The disease, so called, is none other than subacute nephritis, and the urine which accompanies it is characterized not by an increased secretion of phosphates, but by an essential alkalinity, or at least neutrality, of this liquid."

We have given Dr. Aldridge's sentiments on this matter at length, because they agree perfectly with our own. Without pretending to argue the chemistry of the matter, we have long found practically that persons labouring under alkaline urine and what is called the phosphatic diathesis were frequently not benefited by the tonics and mineral acids recommended for it, but not unfrequently made worse. In such cases we have seen *low* diet, abstinence from every thing stimulating, whether in medicine or in drink, and gentle laxatives, produce marked benefit. We cannot say that, in any of these cases, we have tried depletion, or even counter-irritation, but we should have no hesitation whatever to resort to one or the other, when pain in the back, or other symptoms, seemed to offer a

reason for it. We are glad, then, to meet with these observations of Dr. Aldridge's, because we believe that they are calculated to do away with injurious and routine practice.

But we must confess, that the alkaline diathesis, though often unimproved by tonics or by stimulants, will not bear with impunity *much* lowering. It is a nice point to steer between extremes, both bad, and the individual case must be watched, and the judgment of the practitioner exercised.

To return to Dr. Aldridge:—"I do not mean to deny, however, that there may be sometimes an increased quantity of the phosphates, occasionally present in disease: on the contrary, I have observed such to be the case, under certain circumstances. First, in old diseases of the bladder, such as ancient catarrh, fungoid growths, &c., there is frequently observed a deposit like mortar, consisting commonly of glairy mucus, and phosphate of lime in enormous quantity. Now, when we recollect that phosphate of lime is contained in the urine, normally, in very small quantity, that it is notorious that calculi, composed of this substance, frequently form in the substance of the prostate, and that it is in the cloacum of birds (an organ analogous to the urinary bladder), that the egg acquires its shell, it is not, I conceive, too bold an hypothesis to imagine, that in these cases, the phosphate of lime is secreted by the lining membrane of the bladder.

"Secondly, I have seen some cases where crystals of the neutral ammoniacal magnesian phosphate were deposited in considerable abundance from an acid urine. The most remarkable example of this kind occurred in a boy, seven years of age, at St. Vincent's Hospital, who had rickets, and whose thigh was broken by a slight accident; the quantity of phosphoric acid contained in four ounces of his urine, was 8.76 grains: the fracture took long to reunite."

5. *Diagnostic Characters of Urine in Typhus Fever.*

There are generally met with three varieties of urine in typhus fever:—

1st. A pale transparent urine, of medium specific gravity, and possessing the ordinary properties of healthy urine.

2d. A very deep-coloured transparent urine, of high density, passed in small quantity, and neutral in its re-action.

3d. A deep-coloured scanty urine, transparent while warm, but depositing copious lithates according as it cools, and acid in its re-action.

"Of the forgoing, the first variety is rare, and is frequently considered, by practical physicians, a ground of unfavourable prognosis, inasmuch as it displays a want of balance in the febrile movement, for the same reason as a clean tongue in typhus is regarded by some as a bad sign.

"Most practical men consider the second variety as still more unfavourable, especially if it persist throughout the course of the fever. If, however, after a certain number of days, a cloud of lithates should present itself, or a lateritious sediment, as it is called, should fall down in the urine of a patient previously passing the second variety, this is considered a kind of fortunate crisis, and the patient's recovery is expected with greater or less confidence. In addition to this sign, some physicians regard the presence of albumen as an evidence of a favourable turn having taken place in the disease.

"Now let us contemplate the true nature of this high-coloured transparent urine. It is deeply coloured, because it is concentrated; being passed in small quantity, it contains comparatively little water, and therefore the colouring matter is not much diluted. It is transparent, because it is alkaline or neutral. The deposit, in the third variety I have described, consists of *super*-lithates. If aqua ammoniæ be added to this third variety, the sediment will re-dissolve, because the super-lithates, in that case, will be converted into neutral salts, which are soluble. Now the second variety being alkaline or neutral, the lithates are held in solution by the additional quantity of alkali present."

"This transparent kind of urine contains as much of the lithates as that which deposits a copious sediment. How futile, therefore, the hypothesis that an increased secretion of lithates is critical!

"This variety of urine is transparent, because it is neutral or alkaline. Now, an increased quantity of alkali may be present in the urine of typhus, from either of two causes; from the patient having taken some alkaline medicine, or from his labouring under a nephritic complication.

"Carbonates and citrates of the alkalies are amongst some of the most common palliatives employed in the treatment of fever. No data, for diagnosis or prognosis, can of course be drawn from urine, rendered transparent by the use of these medicines."

Dr. Aldridge proceeds to observe, that the urine may be neutral, or alkaline from nephritis, which may co-exist with typhus, independently of the symptoms usually said to indicate it. M. Louis gives one, and M. Rayer six cases of nephritis, complicating typhoid fever.

"In general, in these cases, there was the most marked prostration, dorsal decubitus, teeth and tongue covered with a sooty exudation, copious eruption; these patients had a constant tendency to stupor and muttering delirium, without much heat of head, contracted pupils, tendency to epistaxis; the urine was scanty, frequently suppressed, bloody, or albuminous, and alkaline; they all terminated fatally."

In cases of this sort the appearance of the lithates is a favourable symptom, not because a lateritious sediment is critical, but because it demonstrates the resolution of a dangerous complication.

It is the opinion of some that the presence of albumen is a favourable sign in typhus. Dr. Aldridge thinks that the phosphates have been taken for albumen. A *boiling* temperature throws down the former, but they are re-dissolved by nitric acid.

6. *Cerebral Symptoms produced by Renal Diseases.*

Every body knows, that interruption in the action of the kidneys leads to the accumulation of urea in the blood, and symptoms of cerebral oppression. But Dr. Aldridge makes a few remarks upon the subject.

The cases of disease, he says, in which the elements of the urine accumulate in the system, appear to depend either upon an obstruction in the kidney itself, or some of its ducts, or a derivation towards some other surface, from whence excessive secretion takes place. He is disposed to ascribe the retention of the elements of the urine in the blood in cases of calculus, clots of fibrine, or worms, impacted in some part of the passages, of mottled kidney, and of acute nephritis, to the first cause; and the suppression that occurs in cholera to the second.

But Dr. Aldridge does not clearly see why acute inflammation of the kidney should suspend secretion in it. This is contrary to the analogy of other organs, in which inflammation leads to an increase of secretion.

He alludes to a point connected with Bright's disease.

"In cases of granular degeneration, when the specific gravity of the urine is low, and this fluid is passed in a less quantity than natural, delirium alternating with stupor occurs, as a consequence of the accumulation of the essential elements of the urine in the blood. But it is not only in such cases that you have these symptoms presenting themselves in Bright's disease: occasionally, muttering delirium and drowsiness, are observed where the quantity of urine is so considerable as to prevent the supposition, that the accumulation can be dependent on a want of excretion. How are we to account for the cerebral symptoms under such circumstances?"

Dr. Aldridge alludes to the occasional supervention of head symptoms on the absorption of the effusion of dropsy from the cellular and serous cavities. Dr.

A. has never seen these symptoms shew themselves in dropsies from cardiac obstructions.

"Marchand and others have ascertained that urea exists in the dropsical effusions of Bright's disease. May not this fact afford us a clue to such cases as I have described? The dropsy becoming absorbed, the urea previously in the cavities is now thrown into the circulation and poisons the brain."

"Not only is accumulation of the elements of the urine in the blood produced by obstruction in the kidney or its ducts, but likewise by a derivation from the kidneys by excessive secretion elsewhere. A remarkable example of the operation of the latter cause occurs in spasmodic cholera. The copious rice-water discharges in this disease check most of the other secretions, and amongst the rest that of urine; urea consequently collects the blood, and cerebral symptoms are produced.

Dr. A. suspects, as we do, that frequently urinary delirium and coma are mistaken for cerebral disease, a careless *post-mortem* examination soon strengthening the opinion.

7. *Air from the Urinary Passages.*

Dr. Aldridge relates a case of this description, communicated to him by Mr. M'Dermot.

The patient was attacked, in the autumn of 1841, with excessive pain in the bowels, and was treated for inflammation: bled freely, and otherwise actively treated. He recovered with difficulty, and, on resuming his business (which required much and continued exertion,) he became subject to the urinary disease. He stated, that it made its attacks after taking exercise, these being preceded by chill, rigour, and febrile disturbance. During the attacks he suffered from excessive pain in the region of the bladder that increased to agony when he attempted to make water: the urine was loaded, thick, and ropy, and threw down a deposit, which gave the idea of being feculent, and when he made water, there were, generally, one or two puffs of air from the orifice of the urethra, at the termination of the flow of urine. The urine had at times a very fætid odour. The man thought the air got into the bladder from the bowels, as, whenever he passed wind, he felt pain in the region of the bladder. He was, and looked in indifferent health. There was much pain on passing the catheter through the prostatic part of the urethra, but no distinct enlargement of the gland.

After taking some oxyde of silver pills, which disagreed very much, the complaint left the patient.

It is not very clear, whether there was a fistulous communication between the bladder and the rectum, or whether the air was not secreted by the inflamed mucous membrane of the bladder. The urine was that of chronic cystitis.

ON THE INHALATION OF AMMONIA GAS AS A REMEDIAL AGENT. By ALFRED SMEE, Esq.*

If this gas is allowed to come in contact with the conjunctiva, it stimulates it, and causes much fluid to be poured from its secreting surface; when absorbed by the mouth in large quantities, it appears to cause in a similar manner an increase of the watery part of the secretion from all the parts which it reaches. The glottis offers no resistance to the passage of this gas when in a diluted state, but allows it to pass along the various ramifications of the bronchi, causing sensations which are extremely grateful and agreeable.

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* Medical Gazette, April 7th.

"The immediate effect of the inhalation of this gas is to cause the fauces and phalanx, before dry, and perhaps covered with inspissated adherent mucus, to force out a watery fluid to lubricate and relieve the membrane; the phlegm will then separate and come away, and a more or less instantaneous relief is frequently felt."

The most convenient mode of administering it is, to use the vapour that spontaneously exhales from solutions of ammonia. For general purposes, the liquor ammoniæ of the shops diluted with ten times its bulk of water, may be employed; this solution may then be placed in a common phial, and as much inserted as to occupy about the two lower inches of the bottle. The patient has then only to apply the mouth of the bottle to his lips, and draw in his breath, when he will inhale a certain quantity of the ammonia. The number of inspirations to be taken at one time may be regulated by the strength of the water and the effect of the remedy. Two, or three, or four inspirations will, in general, be sufficient at one time, but this must be repeated three or four times during the day.

The vapour inhaled from the liquor ammoniæ does not seem to pass away immediately, but may be tasted for some minutes afterwards, even subsequently to the commencement of its beneficial action. The remedy is most applicable to cases of what is called dryness of the throat, which appears to arise from a deficiency of the proper lubricating fluid; the mucus becomes dry, and causes much uneasiness to the individual.

Ammonia gas is also beneficial in chronic hoarseness, especially in that which is often left as a sequela of influenza. It affords great relief to the relaxed swollen state of the mucous membrane, produced by remaining in crowded, over-heated, and ill-ventilated rooms. In cases of incipient cynanche tonsillaris it appears to be of much value if used at the very commencement of the attack, the slight impediment to deglutition, which is generally the first premonitory sign, is sometimes removed by one or two inhalations.

"In old standing cases of asthma, especially in those in which the medical man considers that the internal use of the sesquicarbonate of ammonia is indispensable, in which the extremities are cold, the pulse feeble, and the general vital powers depressed, the local application of ammonia is particularly grateful, the patients feeling, as they describe it, a glow after its exhibition, and the warmth first imparted to the lungs extending by degrees over their whole system.

"In cases where the patient feels a peculiar sense of contraction upon passing into cold atmospheres, as though the lungs resisted the intrusion of so unpleasant an agent, the inhalation of ammonia seems to quiet the spasmodic action, relieve the breathing, and give a comfort to the whole chest, which is delightful to the feelings of the sufferer."

This remedy should, of course, not be employed during the presence of an acute state of inflammation, but in chronic cases, or when the circulation is feeble, the inhalation of ammonia may be used with the greatest advantage and comfort to the patient.

Ammonia is also stated to be useful as an antidote to certain direct and powerful poisons. One of these poisons, the effects of which it thus neutralizes, is bromine; the hurtful action of which is instantly counteracted by the vapour of ammonia. It is also useful when hydrocyanic acid is floating in the atmosphere of a room, as in this case it not only neutralizes the acid, but its stimulating properties are directly opposite to the depressing action of the acid.

In acting upon the lungs, and increasing their aqueous secretion, ammonia frequently causes at the same time a similar action on the skin by the exhalation of moisture from its entire surface. Hence during the prevalence of easterly winds, the gas may often be beneficially employed in determining to the surface and relieving the painful and annoying sense of constriction then experienced.

Miscellanies.

QUARTERLY TABLE OF THE MORTALITY IN 114 OF THE PRINCIPAL TOWN OR CITY DISTRICTS OF ENGLAND. Winter Quarter of 1843, ending 31st March.

This quarterly return is derived from 114 districts, the enumerated population of which at the last census was 6,534,535, or nearly *four-tenths* of the total population. The average annual number of deaths registered in the 114 districts was 163,193, or 47 per cent. of the total deaths registered annually in England. Take the averages of the five last years, it appears that the mortality attained its maximum in the year 1840, and was the lowest in the year 1842. Out of 100,000 persons living in the towns and cities of England, about 2658 died in the year 1840, and only 2420 in the year 1842.

The number of deaths which occurred in the Winter quarter 1843, was 43,466; though according to the average of the last five years, it ought to have been 47,542.

In the *Metropolis* the mortality is still less than the average, amounting to 12,312, the population in 1841 being 1,870,727.

With regard to the diseases which have prevailed during the quarter, we find that the deaths by epidemic diseases (2071) were 363 less than the average of the five preceding Winters. The deaths from *typhus* have however increased from about 30 to 50 weekly. *Small-pox*, *whooping-cough*, *influenza*, and *erysipelas*, have been less fatal than in the five preceding winters. No case of death from *hydrophobia*, occurred, and only 3 from *tetanus*, 456 from *asthma*, 1 from *intussusception*, 54 from *mortification*, 267 from *violent death*. Of dysentery (33,) cholera (6,) tabes mesenterica (73,) jaundice (34,) disease of liver (117,) and ovarian dropsy (10)—a greater number than is usual—died in the metropolis.

The epidemic diseases most frequently mentioned by the registrars in the country are, *typhus*, *scarlatina*, and *whooping-cough*.

Some districts, in which the number of deaths was *above* the average of the Winter quarters (1838—42) in the same districts:—Brighton, Bedford, Yarmouth, Devizes, Plymouth, Penzance, Stroud, Hereford, Woolstanton and Burslem, Coventry, Basford, Macclesfield, Blackburn, Huddersfield, Newcastle-on-Tyne.

Some districts, in which the number of deaths was *below* the average of the Winter quarters in the same districts.—Windsor, Oxford, Cambridge, Ipswich, Norwich, Bath, Bristol, Clifton, Worcester, Kidderminster, Dudley, Wolverhampton, Birmingham, Liverpool, Preston, Bury, Wigan, Manchester, Sheffield, Bradford, Hull, Sunderland, Carlisle, Kendal, Merthyr Tydvil.

Meteorology.—The average height of the barometer was 29.715 inches, or 0.134 parts of an inch lower than the average. The mean temperature was 1.3 above the average. The fall of rain in the quarter was 3.429 inches in 29 days, while the Winter average is 2.886 inches in 26 days. The South and West winds prevailed.

DIRECTIONS TO THE REGISTRARS OF DEATHS.

[*To the Editor of the Medico-Chirurgical Review.*]

General Register Office, 6th May, 1843.

SIR,—I shall feel much obliged if you will inform the readers of the *Medico-*

Chirurgical Review, that the Registrar General has recently given the following directions to the Registrars of Deaths.

"When the information given to you by the medical attendants upon deceased persons, respecting the causes of death, contains also a statement of the *duration of the fatal diseases*, or is accompanied by the memorandum '(p. mort.)' denoting that the nature of the causes of death had been ascertained or verified by a *post-mortem* examination; you will not fail to enter these statements in the column of the Register headed 'cause of death.'"

It is desirable, on many accounts, that the laws respecting the duration of diseases should be ascertained, and this will afford the medical profession an opportunity of entering on permanent records a sufficient number of observations for determining those laws, as well as the laws of mortality.

With regard to the registration of the "causes of death," it has been found the most convenient and satisfactory course, for the medical attendant to leave a written certificate with the friends of the deceased person—to be placed in the hands of the Registrar.

The Registrar is directed to ask the informant whether any written statement of the cause of death has been left by the medical attendant; but the relatives, from the natural distraction of grief, or ignorance of its scientific importance, are apt to forget the medical certificate, unless the medical attendant take the trouble to state that it will be required, and place it in their hands.

If the medical profession needed any stimulus to induce them to contribute to the promotion of medical science, or to the discovery, and consequent removal of the causes of untimely death, it will be found in the following considerations, to which the Registrar General has adverted in his last Report.

"I hope the members of the medical profession, who have hitherto given their aid, will cordially assist in carrying out this national registration of the causes of death, as they alone are able to give a correct statement of the nature of the fatal diseases; and to them more than to the members of any other profession, must be apparent the vast importance of thus collecting accurate materials for advancing the science of Vital Statistics."

Copies of the Statistical Nosology, with notes and observations for the use of those who return the "causes of death," may be procured by any medical practitioner, upon application (verbal or written) at the General Register office.

I have the honour to be,
Sir,
Your obedient servant,
WILLIAM FARR.

A New kind of Pessary.

Mr. Snow has invented a new kind of Pessary, which consists of a piece of sponge cut into the form of a sphere, and tied up, by means of small twine or silk thread, in a circular piece of oil-skin, in such a manner that a small stem or tail, about half or three-quarters of an inch long, is left. The firmer kinds of sponge are to be preferred, and the oiled silk ought to be closed as firmly as possible by tying.

On compressing this pessary, the air in the cells of the sponge is gradually forced out at the neck, between the folds of the oil-skin, when it can be very readily introduced. When passed above the contracted part of the vagina, air soon re-enters the cells, and the instrument becomes expanded. The tail facilitates its removal at any time.

The advantages which Mr. Snow considers this pessary to possess are—

1. Its capability of being diminished in size during its introduction and removal.

2. Its softness, which is such that it can scarcely cause any of the effects of a foreign body.

3. Its small weight.

4. The tendency of its elasticity to keep it in its position, for any sudden pressure of the viscera above will be spent in overcoming this elasticity, instead of forcing the instrument through the external parts, and such pressure will flatten it and make it wider, thus rendering its extrusion the less possible.

It also possesses the advantages of being cheap and durable.

SHOULD THE CHILD BE PLACED TO THE MOTHER'S BREAST SHORTLY AFTER DELIVERY?

Such is the question asked by Dr. Hocken, and answered thus:

Both the mother and the child are benefited by the early application of the latter to the former.

1st. It leads to contraction of the uterus and prevents hæmorrhage. Such an occurrence never takes place when once the mother has given suck to her own child; no uneasiness need be entertained on this point, if we have seen the child applied to the mamma before leaving the patient's house, for under these circumstances, the uterus is sure to maintain a firmly contracted condition. Besides, the contraction of the womb obviates the formation of clots, which subsequently give rise to painful efforts for their dislodgement.

"We thus avoid, by placing the child to the breast early, continued and severe after pains, and what is in some cases of much greater importance, a profuse, continued, and sanguineous discharge of the lochia. Firm clots of blood will sometimes remain for some time, and undergo putrefactive changes in the uterus, and I think that there can be little doubt that absorption of putrefactive matters into veins, and the general circulation, does occasionally happen from such causes. No one can doubt that such causes would prove adequate to occasion phlebitis or the worst forms of malignant fever, or that having such an origin, it should not be capable of secreting a morbid poison, capable itself of propagating the disease to others."

2. The measure tends to suppress hæmorrhage which has occurred. "Even," says Dr. H., "in those severe and alarming states, where restlessness and jactitation have already set in, where one fainting fit succeeds another, the skin is covered with a cold and profuse perspiration, and the breath feels cold and damp, placing the child to the mother's breast will never fail, provided the woman is capable of recognizing her offspring. The countenance brightens, a gush of blood and coagula show that the womb has expelled its contents, and by its firm contraction resists future hæmorrhage. The mere act of sucking the breast is not of itself sufficient; for these favourable results will not follow if another child could be placed to the breast, or if the mother be incapable of recognizing her own offspring."

3. At the time of the child's birth, the nipple projects freely, and is easily seized by the child. If, however the child be not placed at the breast for a day or two, it becomes considerably enlarged from the accumulated secretion of milk, the nipple becomes buried instead of projecting, and the child experiences the greatest difficulty in seizing it. In this process the nipple suffers considerable violence, and the thin delicate skin covering it is apt to crack, and form painful fissures, by the child's constant attempts, which are kept up and increased by the continued difficulty.

The prevention of accumulation, too, in the milk ducts obviates mammary inflammation and abscess.

4. "Immediately the child is born, and sometimes even before this, it will

instinctively suck anything introduced into its mouth, and seek the nipple when placed to the breast. On all hands it is allowed that a gentle aperient is requisite to get rid of the accumulated meconium; but why have recourse to substances which will disagree with the *primæ viæ*, when Nature has provided a most beautiful and simple aperient medicine in the colostrum, or the first formed serous milk? The child is born hungry, and instinctively desirous of the nipple, but instead of gratifying its natural taste, a quantity of artificial, and, to it, indigestible food and irritating medicines, are thrust down its throat."

In all this there is much good sense, and it is difficult on the ground of reason or common sense, to argue that nature intended a child not to suck its mother's breast for 24 hours, or be crammed with castor oil as soon as it is born.

CURE OF VENEREAL WARTS.

In a late Number of the Lancet Mr. Francis states that two remedies which he has tried for the extirpation of venereal warts, have always perfectly eradicated them, namely powdered savine and a solution of lunar caustic; the first to be applied to the warts every night, taking care previously to wet them, in order that the powder may adhere to them. The quantity ought not to be more than will lie on the top of a good-sized horse-bean. Applied every night for a week or ten days, this remedy will, it is said, cure them effectually. Should this, however, not be considered powerful enough, the savine may be sprinkled every night, and on the following morning a solution of nitrate of silver (four grains to the ounce) may be applied. These two remedies Mr. Francis always employs, and has never found them useless.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN IN LONDON AND ITS VICINITY.

The annual dinner of this Society took place on Saturday, June 3d, at the Freemasons' Tavern, and was attended by about seventy of the members and their friends. The Duke of Cambridge, who presided, announced that he had accepted the office of Patron, and would at all times willingly promote the Society's welfare.

Donations were announced to the amount of £308 15s., being a much larger sum than usual.

WESTMINSTER HOSPITAL.

On the 6th of June, Mr. Guthrie resigned the office of surgeon to this Institution; he will still, however, afford his services as consulting surgeon, and will deliver annually a course of clinical lectures. Mr. Hale Thompson has succeeded to the appointment of surgeon, and Mr. C. Guthrie to that of assistant-surgeon.

ST. THOMAS'S HOSPITAL.

Mr. M'Murdo has succeeded Mr. Tyrrell as surgeon to St. Thomas's Hospital.

GUY'S HOSPITAL.

In consequence of the state of his health, Dr. Bright has resigned the office of senior physician to Guy's Hospital, and has been succeeded by Dr. Addison. Drs. Barlow and Rees are made physicians to the Hospital, and Dr. Golding Bird assistant-physician.

OBITUARY.

SERVICES OF DONALD MACLEOD, M.D., LATE INSPECTOR-GENERAL OF HER MAJESTY'S HOSPITALS IN THE EAST INDIES.

SINCE the peace of 1815, hardly a single death has occurred, of any officer of any merit or service, that has not been followed by some biographical notice in some of the periodical prints of the metropolis.

Death has not spared the KG.'s—the KT.'s—KP.'s—GCB.'s—KCB.'s—GCMG.'s—KCMG.'s—CMG.'s—GCH.'s—KCH.'s—KH.'s or last, though not least, the ☙'s, or granted to them any immunity from the common doom in consideration of their previous services: and, if the customary three volleys of musketry have not sounded their requiem, they have seldom wanted trumpeters, in the shape of memoir-writers to proclaim their praises.

It is far different with the unobtrusive but the important services of the Naval or Military Surgeon. To him the votive urn is seldom erected. No glorious blazonry closes *his* prospect. With him there is no spirit-stirring association of ideas with the camp or the field; no anticipation of medals or honours. He forms in himself a moral anomaly, since to his toils, labours, services and merits is denied what is so lavishly conceded to those of his brother officers of every military arm. He is the humiliating exception to the rule of—

Palmam qui meruit ferat:—

medals, stars, military insignia, are not for him, nor the fond hope—

"Of being remembered in his line
In his land's language."

Ought this stigma upon an useful and an honourable class to continue in force one hour longer? We leave it to every man of common sense, and possessing a knowledge of the first principles of justice, to answer the question.

The surgeons of our fleets and armies, even the most distinguished, have sunk into obscure graves, like the most ordinary citizens, uneulogised and even unnoticed. Nevertheless would it be most easy to shew, that in the hour of peril, in what Napoleon emphatically called "*two o'clock in the morning courage*," which he knew but few to possess; in the noble fortitude, in the energy, enterprise, and strength of will, necessary to meet and to conquer danger; these have not been behind the best and foremost of their countrymen, whether at sea or on shore. Among the best—amongst the most modest, the kindest and the bravest, of the class we are here speaking of, was Donald Macleod. A native of the Isle of Skye, he entered the Army at a time when its ranks were crowded with his fellow-isles-men,* many of whom have since been variously distinguished in every quarter of the globe.

* Within the last 40 years, the Isle of Skye, barren though its soil and scanty

Before we present to the reader the brief but touching memorial presented in 1827 by Dr. Macleod to the Duke of Wellington, we will notice an incident in his life which, at the same time that it shocked the feelings, excited the lively sympathies of the army. We believe it was at the siege of St. Sebastian that the subject of this notice was conversing with a younger brother, a captain on duty in the trenches, when a cannon-shot literally knocked this latter officer to pieces, covering the elder brother with his blood and brains.

We knew the late Dr. Macleod intimately, but never heard him allude in the remotest way to this event. The following we received from him while on his last honourable and important service in India. It was given us with a modest smile, characteristic of the kind-hearted and estimable author, than whom we have not known a better man or a warmer friend, and our career has been long and varied.

Memorandum of the Services of Staff-Surgeon Donald Macleod, M.D.

Hospital Assistant	10th Sept. 1799.
Assistant-Surgeon 82d Regt.	30th June, 1800.
Surgeon 38th Regiment	25th Nov. 1803.
Staff-Surgeon	24th Sept. 1813.
Placed on Half-pay	15th April, 1821.
Re-appointed	15th March, 1827.

Previously to entering the regular service, I was Surgeon's Mate of the 1st Battalion and Surgeon of the 2d Battalion of the Breadalbane Fencibles, from the 25th February, 1798, to 24th March 1799. I served with the Duke of York in Holland, in 1799. In the Mediterranean to the end of the war, in 1802. At the capture of the Cape of Good Hope, under Sir David Baird. At Monte Video, under Sir Samuel Auchmuty; and at Buenos Ayres, under General Whitlock. I went to Portugal with Sir Arthur Wellesley, and was at all the operations of that campaign to the battle and embarkation at Corunna.

I was at Walcheren during the whole time it was occupied, and returned to the Peninsula in May, 1811. I was in the battles of Salamanca and Vittoria, and at the sieges of Burgos and St. Sebastian, and in all the actions fought in the neighbourhood of Bayonne and Orthes. I embarked at Bourdeaux for Canada, with the Brigade commanded by Major-General Robinson, and served there for a year; during which period I was present at Plattsburg, and at most of the operations on the Lower Frontier. On my return, I joined the army in France, and remained there till the formation of the army of occupation.

I did duty at Dover, and in London, from June, 1816, to May, 1821. On retiring on half-pay I went to New South Wales with the Governor, Sir Thomas Brisbane, where I remained about four years; and although not absolutely employed in the Medical Department of the Army, I was still in the King's Service.

I am now returning as Staff-Surgeon to that colony, without one single advantage, and with nothing but the bare pay of the rank I have held for twenty-four years, in every quarter of the globe. This is my position after a service of 29 years and 4 months.

DONALD MACLEOD, M.D.
Surgeon to the Forces.

London, 15th Aug. 1827.

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its population, furnished to the public service 21 general officers, 45 colonels, 600 majors, captains, and subalterns, 10,000 foot soldiers, 4 governors of colonies, 1 governor-general, 1 adjutant-general, 1 chief baron of England, 1 judge of the Supreme Court of Scotland, besides many other superior officers.—*Scotch newspaper.* To which it may be added, that to the learning and worth of some of its clergy the celebrated Dr. Samuel Johnson has warmly testified.

There is little to add to the above statement. I sailed from the Cove of Cork on the 27th September, (being the fifth time I left that place for Foreign Service,) and landed at Sidney on the 30th January, 1828. I remained as Staff-Surgeon, and principal medical officer of the Colonies of New South Wales and Van Dieman's Land to the 17th January, 1830, when I sailed for Bombay, having been appointed Deputy-Inspector-General, and remained in that Presidency till February, 1834, when I was transferred to Madras, and from thence promoted to be Inspector-General in Bengal in July, 1837.

DONALD MACLEOD.

Such is the plain unvarnished statement of one who, had he belonged to any other class but that of which he was so distinguished an ornament, would have had his name enrolled among those whom (to quote the sacred historian)—"the king delighteth to honour." What! perhaps some unreflecting objector will say—did he not attain the highest rank of his corps—did he not die an Inspector-General of Hospitals? Very true—but does the human mind aspire to nothing beyond the mere heritage of routine? Would a general officer, or even a colonel of a regiment, be satisfied were the same argument to be applied to him? If *he* would not, wherein is the justice of supposing that the medical officer either is, or *ought* to be, contented with the mere status that every average man may obtain? Are we never to rise beyond shop-keeper ideas, such as "the foremost man of all the world"—Napoleon reproached us with? Are we never to get out of the slough of mere money considerations in recompensing merit of a high order? What was it that made the French army prompt and ardent as one man to follow their leader to danger and death? Our reply is simple—the assurance of renown living or dead, and the electric fire of that admirably devised machine for rousing emulation, and keeping the current of human nature ever clear and flowing—the legion of honour! It is not enough then that for such a person as the subject of this memoir his country should have done no more than make him an Inspector-General of Hospitals. Up-hill as the task may be, we do not yet despair to see the claims of a too-long neglected class placed upon a broader and more honourable basis than they have ever been in this country, which has been contented in this as in some other things having scientific reform in view, to halt behind France.

We have said that the subject of this sketch was a kind and brave man. This however is only giving a very meagre outline of his character, and his rare modesty rendered it difficult for the observer to procure elements for filling in the portrait, save when they evolved themselves unconsciously in the slipshod easy intercourse of private life, with friends who loved and valued him. As a professional man he was quietly but keenly and accurately observant, and took a deep interest in all that related to the healing art. His large experience, and his entire freedom from dogmatism, with the admirable good sense which was ever in him a preservative against the allurements of theory, made his conversation as instructive as it was pleasant. His reading was not confined to the professional walk, but comprehended an intimacy with the best historical authors, and the works of the most distinguished writers in dialectics and general science. It required however, that those with whom he conversed should, as the phrase is, draw him out, when his extensive acquaintance with many men and countries afforded him a facility of illustration, and a diversity of *fresh* anecdote, which he whose travels are limited to a library, or fire-side scenes, can never command. His knowledge of *the soldier*, individually and collectively, of his capacity, of his weak and of his strong points, ill or in health, was intuitive and profound. To the last he was no less respected than beloved by the men and their wives—for though strict and firm in the exercise of professional authority, he tempered it with a kindness and consideration that endeared him to them all, as a friend conscientiously interested in their welfare. It may enter very little

into the calculations of a general or commandant, but it is nevertheless most true, that in the statistics of armies, the bearing, the conduct, and the tenderness no less than the promptitude, skill, and scientific resources of military surgeons, have an immense effect in cherishing good feeling, and preserving and strengthening discipline among the soldiery. This will become more obvious when it is recollected that there are only two officers in a regiment who may be supposed to have a general knowledge of the men in a state of health, viz. the commandant and the adjutant. The acquaintance of the remaining officers is confined to the men of their own companies. The military surgeon on the other hand, comes in contact with every man in the regiment by turns, for at some time or other they all may be said to pass through his hands. His knowledge of their character therefore must be more esoteric, so to speak, than that of their officers, seeing that he has, as it were, the measure of their moral power to endure suffering and privation: for suffering and privation are the conditions upon which the soldier comes under the military surgeon's care. The family relations of the soldier also bring him peculiarly within the sympathy of the military surgeon. When writhing under the lash or pining on the cot where he lies wounded or dying, it is to the military surgeon that he looks for succour and consolation. The military surgeon who understands his duty, and acts up to its solemn obligations, is not only looked up to as an officer that must be obeyed, but as an advocate, a conciliator, and a friend in a variety of ways, that any one who has served even for a short time with troops, will at once comprehend, without rendering it necessary for us to dilate further upon it here.

By his brother officers, of every arm, Dr. Macleod was universally beloved and esteemed for the qualities of his head and heart. In his personal appearance, he was about five feet ten inches high, and of compact mould. His countenance was of the contemplative cast, and peculiarly expressive, more especially when lightened up by a smile. His capacity for enduring fatigue and vicissitudes of temperature, was extraordinary. With him it was no uncommon thing to pass night after night without sleep, refreshment, or changing his clothes, even when the weather was wet and inclement. Of active habits, and temperate no less in diet than in recreation, what many might deem hardships, were regarded by him as trifles. In this he evinced himself a genuine highlander of the old stamp, in whom self-control and powers of uncomplaining and cheerful endurance, were united with gentlemanly courtesy, and knowledge of the world. Perhaps it had been well had his constitutional and soldierly indifference to fatigue and changes of climate, been less. In that case, perhaps, a greater solicitude for self, than formed with him a trait which abounds in our day, would have led to the promulgation of his valuable life. Always ready at the call of duty, to move wherever his services might be required, he had no time to consolidate those securities for ease and comfort, that may be commanded by officers of a less shifting and more influential department. It was, therefore, nothing for him to be on the route, one day, for the snowy Himalayahs, and anon for the burning plains of Bengal. This most probably affected his health more than he would willingly allow, until fairly knocked down by positive illness. Ever more solicitous about the health of others than his own, the insidious approach of the last enemy were not sufficiently foreseen or guarded against. It might be said of him, that his complaint consisted less of positive ailment, than of a negation of his usual habits. First came an indefinite languor, attributed to temporary causes, and hoped to be got over "in a day or two." Then came loss of appetite, and a scarcely perceptible wasting or loss of flesh. Next became observable a certain quickening of pulse, a febrility, so to speak, and irregularity of hepatic and gastric functions. Such were the wily approaches of liver disease—and ere he appeared himself aware of the danger, the enemy was in the citadel. With the hope of benefiting by change of air, he proceeded in a boat upon the Calcutta River—and had the advantage of the best

medical aid—but all, alas! was without avail. He was latterly perfectly aware of his own state—and the constant presence in the expectoration of purulent and bloody sputa from an abscess that burst into the cavity of the thorax—to less experienced and shrewd observation than his own, would have told the tale with sufficient plainness.

He was in the possession of his faculties to the last moment, and even when the exhaustion of the moribund state made him too weak to speak, he still evinced by signs that he was perfectly calm, collected, and resigned. Thus, a little before he expired, on a spoonful of restorative mixture being offered to him, he waved his hand, with a mournful smile, that spoke as well as words, "It is of no use."

DEATH OF MR. TYRRELL.

It is with much regret that we record the death of this eminent surgeon, which took place suddenly on the 23d instant. The following were the appearances presented on a post-mortem examination.

Chest.—The pleura closely adherent throughout the whole of the right side of the chest, by old adhesive bands. On the left by a few only.

The right lung hepatized, or consolidated, nearly throughout its whole extent; there being only a very small portion that was crepitant on pressure. The mucous membrane of the lower portion of the trachea and right bronchus thickened and of a dark brick-dust hue. Left lung engorged with blood, but crepitating tolerably on pressure.

The pericardium considerably distended, and containing from an ounce and a half to two ounces of dark fluid-blood. On the posterior aspect of the right auricle the investing pericardium, to a considerable extent, had a rough, depressed, and by the aid of a lens, an ulcerated appearance; while the opposite surface of the loose pericardium, had a granular or tuberculated appearance, very similar to the tuberculous accretions which are found occasionally on the peritoneum; there were two or three adhesive bands connecting these two surfaces.

The heart itself was twice the natural size: the muscular fibre pale, flaccid, and flabby, and collapsing; the cavities of both ventricles much dilated; but without hypertrophy of the walls; the left ventricle more especially dilated; in the right ventricle were two or three delicate filaments of lymph of considerable strength, stretching between the carneæ columnæ and the chordæ tendineæ, and across the cavity, the evident result of former endocarditis. All the valves of the heart and aorta were perfectly natural.

The liver was enlarged, very much indurated, especially at the superior portion of the right lobe, and granular throughout.

INTELLIGENCE.

Dr. JAMES JOHNSON has been elected a Corresponding Member of the "NATIONAL INSTITUTE FOR THE PROMOTION OF SCIENCE" in Washington; for which he begs to return his best thanks through the Secretary, FRANCIS MARKOE, Esq.

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THE

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No. LXXVIII.

[NO. 38 OF A DECENNIAL SERIES.]

JULY 1, TO OCTOBER 1, 1843.

MEMOIRES DE L'ACADEMIE ROYALE DE LA MEDICINE. Tom. X. Paris, 1843.

MEMOIRS OF THE ROYAL ACADEMY OF MEDICINE: Vol. X.

ALTHOUGH the present volume, of what may be termed the Medico-Chirurgical Transactions of France, does not contain any of the elaborate and lengthy dissertations which have characterized most of its predecessors, it abounds in a far larger proportion of useful practical papers. Abstracts of most of these we will present to the reader.

I. ON SUPER-MALLEOLAR AMPUTATION. By MM. *Arnal* and *Martin*.

The authors apply this term to amputation of the leg when performed at about three fingers' breadth above the malleoli. The object of the paper is to prove that this site is every way preferable to that usually chosen, viz. five fingers' breadth below the knee. It is so from the greater facility with which the operation is there executed—the less degree of pain that is caused, and consequently less subsequent fever, re-action, and their results—the avoidance of the great volume and projecting angle of the tibia, the difficulty of covering the broad stump this causes, besides the danger of inflammation and caries of the bone, and the risk of producing a conical stump—the less hæmorrhage to control, fewer ligatures to apply, and less fear of secondary bleeding—the less disposition to spasm in the stump—and the greater facility of effecting union by the first intention. The objections raised to this operation are without foundation. Thus, the greater number of tendons implicated, accompanied as they are very low down with muscular fibres, does not give rise to the greater probability of gangrene or delay in healing the stump—it is not a fact that large collections of matter are subsequently formed, amid the connecting cellular tissue, which is here actually in less quantity than higher up—it is erroneous to say that a small stump, covered only with skin, is less solid and more liable to secondary inflammation than a larger one, covered with muscle; for, actually, in this latter, all the soft parts, excepting the skin, become absorbed, or converted into a kind of ligamentous

substance. Larrey has much exaggerated the predominance of the flexor muscles after this operation, for the flexion which does exist, arises, not from this, but from the use of faulty apparatus, requiring constant flexure of the knee-joint. After the operation, the limb should be kept extended, and thus its proper position will be secured, which can only otherwise be produced by time and exercise. When a proper apparatus was used, this forcible flexion, so much spoken of, was not observed in any one of 97 cases alluded to by the authors; nor have any of these suffered from compression of the nerves of the stump—an accident said by some to follow this description of amputation. The results of these 97 operations are presented in a tabular view. From this, the mortality is seen to be but 1 in 10, while the experience of the ordinary operation at the Parisian Hospitals, as stated by Dupuytren, places the mortality at 1 in 4, or, according to our authors, at 1 in 3. The period occupied in the cure is also about half that required after the ordinary operation.

The fact of this operation having been adopted and abandoned by several surgeons, is explained by the authors to have arisen from the non-existence of any properly-contrived artificial leg. It is an extraordinary fact that, although some monuments represent persons wearing wooden legs, no ancient medical author enters into any description of these or other apparatus calculated to supply the loss of the extremity. It is from Ambrose Paré the first ideas respecting these are derived; but those described by him are too complicated and ingenious to have been other than the results of repeated experiments and modifications; and indeed, few, if any essential, improvements have been made from that period to the present. The authors describe the false leg they would wish to substitute for those in use, but we must refer our readers to their paper for this, as any abridged description would be unintelligible.

II. A NEW MODE OF RELIEVING PROLAPSUS ANI. By *A. Robert.*

The author having stated the most powerful cause of procidentia ani to be the paralysis or relaxation of the sphincter, and having enumerated the modes hitherto adopted of relieving the affection, thus proceeds.

"It is easy to observe that if these modes of treatment differ among themselves, they have one common result, that of forming, either above or below the sphincter, a wound, either with or without loss of substance, which in suppurating and cicatrizing contracts the anus, and determines a more intimate union of the intestine or the skin with the subjacent parts. In ordinary cases this cicatrix resists sufficiently well, because it receives a solid support in the sphincter ani, which has lost little of its contractile power. But if this muscle is itself affected with extreme relaxation, whether primary, or the result of the long and excessive distention which it has been submitted to by the tumour, it is easy to foresee, that the cicatrix, being no longer supported, will become extended, and the prolapsus reproduced."

M. Robert next relates a very bad case of prolapsus ani of considerable duration occurring in a washerwoman, as an example of his mode of relieving the affection. He made two incisions at the posterior border of the anus, in the form of a V, the apex meeting at the coccyx, and, having

removed a corresponding portion of the sphincter, he united the parts by the suture, the threads of which were removed on the 6th day. On the 15th day (constipation having been induced by abstinence and opiates) fæcal matters were removed by a scoop, and on the 18th day the woman had a natural stool without the reproduction of her infirmity. She became eventually completely cured.

III. An Efficacious Means of relieving Hæmorrhage, occurring after the Lateral Operation for the Stone. By M. *Begin.*

The only means of any efficacy employed hitherto against this formidable and not unfrequently fatal occurrence are the ligature and torsion, for compression can seldom be borne long enough, or properly adapted to the site of the hæmorrhage. The inability of detecting the bleeding vessel has also repeatedly rendered both the ligature and torsion unavailable. The author recommends, having practised it with success, the constant and copious *irrigation* of the parts with cold water. Of the two cases he narrates, in the first this was accomplished by means of the ordinary lavement syringes, employed vigorously by the pupils of the hospital—one constantly filling while the other was working. The surface of the wound and all the neighbouring parts were in this way freely played upon for some hours without intermission. In the other case, an apparatus was contrived to admit of a constant current of water being directed upon the parts. In both, most complete success attended the practice, although the patients were reduced to an almost hopeless state prior to its institution. The irrigation seemed also to produce a very sedative effect, and was not followed by any re-action of an inflammatory character. The apparatus required is simply a caoutchouc tube and elastic canula, the patient being brought to the edge of the bed during its use.

M. Begin suggests the extension of this mode of treatment to some of the varieties of uterine hæmorrhage.

IV. The Temperaments considered in their Relation to Health. By M. *Royer-Collard.*

The author, who is Professor of Hygiene in the faculty of Medicine, expresses his regret that, amid the great progress of medical science, the department of hygiene should continue stationary, and unfounded upon any true physiological basis. He commences his paper by stating, the ordinary descriptions of the temperaments are founded upon mere conjecture. Thus, (*e. g.*) the statement of the *sanguine* temperament being characterized by the possession of a greater quantity of blood, greater rapidity of circulation, a more developed condition of the circulatory organs, and a greater activity of respiration than other temperaments, is quite destitute of proof; for not only are experiments confirmatory of it wanting, but it is not corroborated by the result of post-mortem examination. So, too, the preponderance of the nervous system, assumed as characteristic of the *nervous* temperament, may be associated with any of

the others. That state of the system, also, termed the *bilious* temperament, is in no wise proved to be dependent upon the presence of an excess or faulty distribution of the bile. That this is the case chemical analysis fails to show, while the morale of such subjects is dependent upon peculiarities of cerebral rather than of abdominal organization. The symptoms of disease, have often, by a forced analogy, been transferred to the explanation of a temperament.

"I believe I have shewn how far the generally received doctrine of temperaments is from presenting that certainty which should characterize a physiological doctrine. All in it is vague; mere suppositions in the place of positive observations; analogies sometimes ingenious, but almost always destitute of proof; and, lastly, an almost utter neglect of all the discoveries which chemical analysis has furnished us with in recent times—such is the condition in which the doctrine remains. What do we see in the usual expositions of the various temperaments. Two things are indicated. First the external signs, which serve to distinguish them from each other; and 2nd, the organic cause, to which they are referred, and by which they are explained. But what an explanation! Does it furnish demonstrated facts which may explain others? Nothing of the kind! Mere suppositions whose uncertainty I have shewn. Evidently this is no logical procedure; this is not that severe inductive process, the only true instrument of discovery, introduced by Bacon and Newton into the study of physical phenomena, and without which all theory is inconsequent and baseless." 151.

A temperament is an universal condition of the economy, one of the forms or varieties in which the condition of health may exist in; and its source and conditions are not to be sought for in this special fluid or that solid, but in circumstances influencing the entire economy. The *blood*, or the nutritive fluid of the body, and the *nervous fluid* (so to speak) are the two universal principles of the body, modifying its condition, whether in health or disease, by their double influence; and it is to the various manifestations offered by these we are to look, not for the *cause*, but for the *characters* of temperaments.

It is, especially, from the results of the chemical examinations of the blood, which have been made of late years, that the author considers himself in a condition to propose a better explanation of the temperaments; and it is from the pursuit of similar examinations he hopes for further improvements. The average composition of the blood as determined by Lecanu, Andral, and others is

Fibrine	0.003
Globules	0.127
Solid organic matters .	0.072
Inorganic matters . .	0.008
Water	0.790

But while these are admitted to be the average relative proportions of the elements of the blood, it is also known that these proportions may, and do, vary, consistently with the state of health, within certain limits. Although the researches of science are not yet sufficiently exact to point out these limits with precision, and to demonstrate where the condition of health terminates, and that of disease commences, some general conclusions of importance may be arrived at. Thus it is found that the proportion of colouring matter and globules designates the degree of vigour of the individual. Andral has in this way observed such difference as regards

strength of constitution, but not in reference to disease. In plethora, or the fullest state of activity of the nutritive functions, he found the proportion raised from 0·127 to 0·140. In the lymphatic temperament, where there is debility, the proportion is lower than the average. The proportion of fibrine seems to undergo neither increase or diminution, unless actual disease is present. The aqueous portion of the blood is found in larger proportion in debilitated constitutions, and in less in those which manifest power.

The blood cannot be identical in its composition in all parts of the economy of even the same individual, for its condition on entering and leaving a secretory organ must be very different. Chemistry enables us to fully appreciate the change it undergoes in traversing the pulmonary vessels; and the same thing occurs, in different degrees, in its passage through the structure of other organs. The changes which are effected by means of the various secretory organs, not always occurring alike in different individuals, may give rise to modifications in their temperaments. In reference to the bilious temperament (*e. g.*) the author observes—

"There are cases in which a primitive modification of the secretory powers of the liver may give rise to the biliary temperament of authors. This happens, when from any cause this organ does not extract from the blood the materials of the bile, in sufficient quantity for the necessities of the system. It will be seen that there must then predominate in this fluid too large a proportion of carbonized, and hydrogenous elements, and of fatty, colouring, &c. matters, which should have been separated by the biliary secretion. But other causes may produce the same effects, for these matters are not only eliminated by the liver in the form of bile, but are so, also, by the lungs in the form of water and carbonic acid, by the kidneys, the skin, and various other modes of elimination. Now, if any accident occurs to impede this elimination, hydrogen and carbon will be found to superabound in the blood. This superabundance, and the consequent predominence of venous over the arterial blood, the slower venous abdominal circulation, and the congested condition of all parts of the system where it prevails, form the essential characters of what has been called the bilious temperament." 160.

If the condition of the *blood* offers the truest material expression of the temperaments, that of the *nervous system* must not be neglected; for, if the one is the centre of the vegetative life, so is the other the centre of the animal life; and the two have a reciprocal influence on each other. But, as before observed, what has been called the nervous temperament may unite itself with very different conditions of the economy. Of the influence of the nervous action he offers the following illustration.

"Take two men, possessing in the highest degree the sanguine temperament, as described by authors, and predisposed to cerebral congestion. One of these will not be able to bear an elevated temperature. During the heat of Summer, or in a heated apartment, he will suffer much from the afflux of blood to the head; and will become relieved upon a diminution of temperature. The other will prove effects directly the reverse under the same circumstances. Why this difference, each having the same temperament? Because, in the first case, the circulation is slow, and the peripheral exhalation scanty; while in the other, the circulation is active, and when the temperature is high, the cutaneous and pulmonary transpiration is abundant, and the central organs are quickly relieved. But in a cold atmosphere the blood is repelled to the interior, and visceral congestions soon follow. Do you prescribe for these two men, the same regimen,

merely because they are said to possess the same temperament? If so, one of the two must suffer. Is it not evident we must here take into account something besides the external characters of the temperament, or the constitution of the blood, and that the so opposite circumstances observed in the two depend obviously upon the nervous action, which is entirely different in the two cases?" 164.

The author declines offering any arrangement or nomenclature of temperaments, satisfied with having pointed out the erroneous ideas prevailing upon the subject, and the mode in which future investigations should be conducted.

Of the distinction to be drawn between *temperament* and *constitution*, he thus speaks.

"*Temperament* is essentially variable: age alone may suffice to substitute one temperament for another; so, also, may, hygienic agents, climate, professions, manners, habits, &c. &c. It is not so with the *constitution*. Every man is primarily endued with a particular constitution, distinct from temperament, and in the study of which the doctrine of hereditariness essentially enters. The constitution may be modified by regimen, but not destroyed. In a word, the constitution is the foundation of the individual being, the temperament is its more or less durable form of existence." 168.

V. THE SUPPLY OF FOOD IN RELATION TO DISEASE AND MORTALITY. By *F. Mélier.*

The Anti-Corn-Law-League might print this paper among their Useful Knowledge Tracts. The author enters into a long examination of the prices of corn, the prevalence of disease, and the amount of mortality in the eighteenth and nineteenth centuries; and finds that high prices and a high ratio of disease and mortality have ever gone hand in hand. From 1815 to 1835, the population and produce of the harvest each increased just 12 per cent. The influence of the price of corn, however, has become less visible of late years, owing to the increased cultivation of the potato and garden produce contributing to supply the deficiencies of bad years.

VI. ON THE VALUE OF THE MICROSCOPIC EXAMINATION OF THE MILK IN THE CHOICE OF A NURSE. By *Alph. Devergie.*

M. Devergie, having the superintendence of the public establishment for nurses, took the opportunity of testing M. Donne's researches respecting the microscopic examination of the milk. The following are his conclusions:—

Under the microscope, a nurse's milk presents globules of three different sizes, that which contains the largest being the most nutritious. Middle-sized globules are most generally observed. The milk with large globules (which, however, the stomachs of some infants will not bear) is usually, but not exclusively, found in the sanguine-lymphatic temperament. The number of globules (or richness of the milk) is not always

proportioned to their size. Large globules are sometimes found in nurses whose external appearance is unfavourable. There may be considerable difference in the milk in the two breasts, often arising from the habit of suckling especially from one breast. When the difference is very great the nurse suckles exclusively from one breast.

The recommencement of suckling after a temporary suspension is attended with an increased richness of the milk. The age of the milk, the age of the nurse, or the colour of her hair, are not attended with corresponding microscopic appearances. Breasts of a middling size furnish the best milk.

He thus concludes his paper.

"A good nurse should be a woman from 25 to 30 years of age, strong in constitution, having a broad chest, sanguine-lymphatic temperament, brown hair, white and undecayed teeth, complexion, and lips coloured. Her breasts should be pyriform, with clearly-defined nipples, and without the veins being much dilated, or the areolæ too large. The milk when placed in a spoon, should be white, with a bluish tinge, not too thick, and of a sweet taste. Examined by the microscope, the size and number of the globules will be seen. But when satisfactory in this respect, it may not agree with the child if its assimilative powers are not equal to milk of the character observed. If its health suffer in the experiment, the microscope may be very useful in ascertaining the differences presented by the milk of a new nurse. But there are alterations in the condition of the milk of which we know nothing, and whose nature the microscope does not elucidate." 222.

VII. On Epidemic Cerebro-Meningitis and Cerebro-Spinal Meningitis. By *M. Rollet.*

These affections have raged at different intervals, for several years, among the chief garrisons of France—civilians in the same towns, though not altogether exempt, being rarely attacked. Most authors have considered the two affections as being but different degrees of the same disease, but M. Rollet thinks differently, and arranges the cases he has seen in two categories. 1. Those (cerebro-spinal meningitis,) with or without affection of the intellectual faculties, but without any lesion of sensibility or motion; and, 2, (cerebro-meningitis,) those manifesting affections of the intellect, the sensibility and motion, with more or less complete abolition of the functions of the external senses.

He relates 28 cases. All his patients were of the sanguine temperament, and consisted, for the most part, of new soldiers, hitherto unaccustomed to the labours of the camp. The affection occurs especially in Spring and Summer.

We need not enter into a description of the symptoms; and the post-mortem appearances chiefly consisted in the altered condition of the pia mater—effusion into the arachnoid, or cerebral ramollissement also sometimes occurring.

Antiphlogistic treatment, of a vigorous character, usually proved useful when promptly applied. When, however, the state of irritation had persisted some time, a condition resembling compression of the brain, attended with complete depression of powers and a filiform pulse, frequently suc-

ceeded. The object now is to relieve the oppressed brain by exciting re-action upon the surface of the body, and thus direct the blood from the centre to the periphery of the system, But ordinary means of counter-irritation produce no effects upon the skin. The author institutes the following sufficiently vigorous procedures *simultaneously*. The patient having been laid on the belly, from six to eight slight applications of the actual cautery are made along each side of the spinal column; large sinapisms are applied to the feet, and kept constantly hot with boiling water, while an ammonical pommade is rubbed into the inner parts of the thighs and legs, and cupping-glasses are applied to the back of the neck. The re-action usually commences in about an hour, and when it is sufficiently established, bleeding must be practised in proportion to the strength of the patient, applying at the same time cold to the head. and heat to the feet.

Certainly nothing but the desperate condition into which the author represents these patients to have been reduced could justify this treatment, which, he says, he has found very successful.

VIII. ACCOUNT OF THE EPIDEMIC MILIARY SWEAT, WHICH PREVAILED IN THE DEPARTMENT OF DORDOGNE, IN 1841. By *H. Parrot.*

Various provinces of France, especially Picardy, have at different periods been affected, on a small scale, with these sweating sicknesses, which some centuries back committed such ravages in our own country. They have usually been attributed to the miserable physical condition of the people in the districts in which they prevail, as shewn in the bad habitations, want of means of removal of filth, damp, &c. and the use of bad black bread, chesnuts, &c. &c. with an almost utter deprivation of animal food and wine—the French Peasant's beer. Dr. Parrot states that all these circumstances prevailed in the district whose devastation he reports upon; but he seems to doubt how far these causes may have been operative in the production of the disease, inasmuch as its progress frequently took place in a contrary direction to that in which filth and want chiefly prevailed, while the lowest dregs of the population were among those who chiefly escaped. He attributes considerable influence to meteorological causes, and geological peculiarities.

The epidemic continued for five months, manifesting itself in different districts in five separate invasions. It frequently caused death in a very rapid manner, and that so insidiously, that many cases which seemed to be so slight as hardly to call for notice, were among the most fatal, so that, at last, it was laid down as an axiom, that a cure could never be promised. In many patients profuse sweating, followed sooner or later by vesicular eruption, seemed the sole effects of the disease. The health and strength, and especially the appetite, continuing good. In other cases the sweating was profuse beyond conception, accompanied by a peculiar odour, and followed by the development of severe cerebral symptoms; tongue was usually moist but yellow, and the appetite, even in bad cases, urgent beyond constraint. Pulse in bad cases hard, vibratory, and frequent. Epigastric pulsation a frequent symptom. Blood drawn presented softened

coagulum and no buffiness. Post-mortem examination revealed no important lesions sufficiently explanatory of the mortality. Out of 597 cases observed by the author, 321 were women, and a remarkable feature of the disease was its inducing menstruation in women, even prior to their proper periods, and not suppressing it when present. The extraordinary number of menstruating women affected, and the great number of abortions which occurred, justly entitled the affection to be considered a powerful *emmenagogue*. Persons of robust constitution seemed most liable to attack, and when seized with the disease fared worse than their feebler neighbours. The *Sulphate of Quinine* (the fever accompayning the disease generally assumed a remitting form) was found to be a powerful means of cure. Accessory means, such as nitrate of potass, venesection, forbidding the excess of covering assumed by the patients, and a due regard to frequent changes of linen, were had recourse to.

The population of the affected district amounted to 83,342: the number of persons affected to 10,805; and the deaths to 797.

IX. On Formative Hygiene (Organoplastie Hygienique). By M. *Royer-Collard*.

The object of Hygiene should not be merely the preservation of health by the prevention of disease; but, also, by the amelioration and perfecting the instruments of life, enable the organism without danger to develop the entire amount of power of which it is possessed. This second object has been much overlooked, and we are at a loss to point to the rules or principles for its accomplisment. That this is the case has always surprised the author; and he asks the following question—

"Since hygiene can always, by the aid of regimen, moderate or excite the vital action, increase or diminish the strength, and direct to a certain degree all organic operations, to what point, also, might not a well considered and systematically combined system of regimen effect a modification in our organs by means of nutrition, and form them as it were as we wish, to develop such a part, to diminish or obliterate another, to change, in fact, artificially, if not the essential constitution of the body, at least its most variable forms which we have been accustomed to term its temperaments?

"Nor is there anything so unreasonable in this *à priori*. Regimen, in fact, comprehends five principal things,—diet—conditions of the atmosphere—exercise—the generative functions and moral influences. That each of these exerts a powerful influence is known to every one; so that we can very well see the possibility of obtaining results which have been foreseen or calculated beforehand, by means of a regimen in which we can rigorously specify the choice of the material of nutrition, and the direction of the vital powers.

* * * * * *

"Anatomy and physiology have made no remarkable progress for these twenty years, but by the comparative study of man and other organised species. Pathology has scarcely entered upon this path. Hygiene is yet more backward in this respect than any other branch of medicine, and, nevertheless, more than any other, she might find in such a study precious and multiplied facts. The practice of agriculture, the rearing of cattle, and the training of domestic animals, have amassed during ages a treasure of positive observations and experiments ready made. The smallest farmer of our fields possesses ideas in which we are deficient

—a curious assemblage of truth and error, the rough result frequently of a gross empiricism, but sometimes also the result of the inspiration of genius." 479-81.

It is principally in the vegetable world that man exhibits the power he has acquired over nature. The modifications which various plants undergo by varieties of culture, and the surety with which these may be produced, are too well known, and have been too well illustrated by Liebig, to call for farther notice here.

Among insects, as in the case of bees and ants, we find nourishment of peculiar kinds or quantities conferring organic powers which did not heretofore exist. Edwards has been able, by exclusion of light and air, to prevent the tadpole, not increasing in size, for that it does, but still more surprising, undergoing its natural transformation into the frog. The wonderful effects which have been produced in England since the time of Bakewell, by the feeding and crossing the race of the various domestic animals, are almost incredible.

"For fifty years," says our author, "have the ideas of Bakewell now prevailed throughout Europe. The art of regimen has been carried to an astonishing perfection. It is well known now, by certain signs, which animals are proper, which improper for fattening, what conditions are necessary to bring them to a certain determinate size, what organs must be directly acted upon to increase nutrition, which description of food produces muscles, which fat, milk in cows, wool in sheep. For each animal is measured its exact proportion of food, air, and light, and the degree of exercise that is necessary to bring it into such or such a condition, for rendering it fitted for such or such a state. It is known when the fat accumulates especially under the skin, in the great cavities, or in the tissue of the organs. The number of pounds to be acquired daily during the treatment may be accurately specified. Every description of animal has been submitted to this fattening system, and thus even fish, which have been castrated, are placed in wet moss, and remaining there motionless, living only to eat and digest, acquire a most extraordinary size." 489.

Seeing the manner in which we may trace the influence of regimen through the entire zoological series, we should be quite justified in declaring its applicability to man. But positive facts proving this exist in abundance; for, not only do we, on the one hand, see the effects of a faulty regimen in the production of disease and degeneration, as in rickets, scrofula, and the stunted condition and susceptibility to disease in the lowest classes; but we also find that, where regimen is carefully attended to, as in the case of training, the athletic powers of enduranee and longevity of the boxer, runner, &c. are produced. The author enters at some length into the consideration of the principles and results of training, which are too well known to the English reader to require being reproduced here, and then proceeds.

"These short explanations will suffice to shew physicians what is accomplished in general by *training*. Nothing can be more simple than such a regimen; and, I may add nothing can be more physiological. It is an exact application of the famous rule of the Methodists, as delivered by Cælius Aurelianus. '*Recorporativis utendum viribus, ita ut, resectis vitiosis carnibus, ac renascentibus novis, reformata organa redeant ad sanitatem.*' The Methodists acted as the trainers. They first bled and purged, and then prescribed wholesome food and exercise. Can we be astonished then at the results of training? We should rather feel astonished at our own surprise, and that a practice so reasonable should appear

to us as something extraordinary and incredible. We should feel astonished that physicians, by the aid of science and often of scientific subtilties, should have so far wandered from the straight and natural path, as to require to be brought back to it by ignorant empirics who have contented themselves with the roughest reasonings, supported by numerous and positive experiments.

"After having accumulated this evidence, which I could easily increase, I may be allowed to establish as an incontestible fact the great power of this art, which, seizing hold, in some measure, of the system of nutrition, directs it methodically towards a determined end, and changes the intimate structure of organs, sometimes in one manner, sometimes in another, without employing any other means than regimen. This principle once laid down and properly understood, who does not see at a glance the great use that may be made of it? How many forms or different degrees of health might be advantageously modified by a systematic regimen, which should exact, on the one hand, but an active and intelligent superintendence, and, on the other, patience and submission to its rules? How many morbid conditions are there also, against which therapeutics exhaust, oftentimes inopportunely, so many powerless or dangerous prescriptions!

"My object, to day, has been to present but the first part of my researches, and that in a very abridged form. The second, which I regard as the more important, will be purely scientific. In it I shall submit each fact to a thorough examination, and deduce thence its true value and the extent of its application." 498-500.

X. On Syphilitic Eruptions. By *Dr. Gibert.*

From among the author's preliminary remarks we extract some observations on *Gonorrhœa.* Of 60 cases of syphilitic eruptions, there were 14 cases in which gonorrhœa was the only symptom which had preceded them, and 28 others in which it was one of the primary symptoms. Dr. Gibert considers, with B. Bell, that the principal site of gonorrhœa is the fossa navicularis, and, with Morgagni and Hunter, that it exists independent of ulceration. Without absolutely denying the correctness of Ricord's assertion, that secondary symptoms in gonorrhœa always proceed from a concealed chancre, he thinks at present it is destitute of the necessary proofs.

In *women* the chief seat of the disease is the *meatus urinarius;* but, whenever he has used the speculum, the author has observed a copious discharge also issuing from the lips of the os uteri. This uterine discharge continues long after all other has been relieved, and is capable of communicating contagion, even although it resembles mere common leucorrhœa. In reference to examination by the *speculum,* the author thinks it necessary to caution his readers, that a *granular erosion* of the cervix uteri, which is sometimes met with, associated with secondary symptoms, is not to be mistaken for a primary chancre of this part, which is a much more rare affection. A granular erosion of a simple inflammatory character is not always easily distinguished from one of syphilitic origin. Moreover, the mucous membrane of the cervix is sometimes excoriated, reddened, or aphthous, and this part may, in women who have born children, offer great varieties as to length, volume, situation, &c.

which have too often been regarded as morbid; and the author justly criticises the practice of those, who, in slight and insignificant affections of the part, (whose very existence is ascertained not by symptoms but inspection, and which let alone would disappear) order leeches to the cervix, bleed, cauterise, insist upon the recumbent posture, &c. He alludes to cases where this had been done even by practitioners of great repute.

Urethritis then is the characteristic symptom of gonorrhœa in woman, and to term the disease vaginitis, as has been done by some who have examined the cases superficially, is erroneous. Of 216 cases of discharge, supposed to be of a venereal origin, in the Hôpital de Lourcine, in 88 discharge was found to be proceeding from the urethra, and in 40 only was there any indication of vaginal affection. But this last figure should be yet farther reduced, for, in many cases, a slight redness only was found, which repose soon dissipated, while, in others, a slight milky discharge only combined with the proper discharge. Those cases in which urethritis was not observed had not been admitted until a month or so after the gonorrhœa had first appeared, at which period the urethral discharge usually ceases, that from the uterus continuing for a longer one. The difficulty of diagnosis is great, for the discharge may continue contagious, when only a small quantity exists at the os uteri, and infection has been imparted when all appearances of discharge have ceased. The same thing it is well known occurs in men, who have infected their wives, after having been pronounced cured by experienced surgeons.

The author arranges the syphilitic eruptions into eight species, corresponding with the eight orders of cutaneous affections he has established in his work upon that subject.

"1.	Exanthemata	(Roseola syphilitica.)
2.	Vesicular	(Eczema and Varicella S.)
3.	Bullous	(Rupia S.)
4.	Pustular	(Ecthyma and Acne S.)
5.	Tubercular	(Multiforme and Lupus S.)
6.	Squamous	(Lepra and Psoriasis S.)
7.	Papular	(Lichen S.)
8.	Macular	(Venereal Spots and Stains.)" 527.

These, however differing among themselves, offer the following characters in common, distinguishing them from non-venereal eruptions:—1. Their copper-coloured appearance, of every shade from a violet-red to an earthy yellow 2. Their great diffusion, they, with some exceptions, tending to spread ever the entire surface of the body. 3. Their obstinate persistence when no remedies are applied, and their ready yielding to these when appropriate. 4. The peculiar appearance of the spots, and cicatrix they leave on subsiding. The author has found the proto-iodide of mercury and the deuto-chloride of mercury the most powerful internal remedies; and the cases which did not quickly yield to these were advantageously treated by mercurial inunctions, applied to the arm-pits at bed-time, and retained there during the night. Local applications, although subsidiary, were not neglected, and were chiefly formed of ointments of the above mentioned preparations. Of 100 cures which were accomplished, there were—

In one month	44
In six weeks	28
In two months	18
In three months and more	10

XI. On intermittent Affections, with Short Periods. By Dr. *Mélier*.

Perhaps it will be better to commence our notice of this very useful paper by transcribing the conclusions the author has arrived at.

After referring to the division of diseases into continued and intermittent, and having dwelt upon the practical utility of recognizing intermittence wherever it is to be found, he says—

"1. I have endeavoured to establish—That the types generally admitted, as the quotidian, tertian, quartan, &c. are not the only ones. 2. That to these we must add others, much shorter, abridgements of the longer, as it were; and without attaching that importance to the title which alone belongs to the thing itself, I propose to call these *intermittent diseases with short periods*. 3. That the diseases which observe these rapid alterations present the same indications as the ordinary intermittents, and require, like them, the employment of the sulphate of quinine.

"It is remarkable that, while authors have sought with much care to establish the existence of intermittents with longer periods than those generally admitted, such as quintans, sextans, &c., which are all more or less problematical, or at all events very rare, they have not inquired whether shorter intermittents might not exist: scarcely indeed, does any author even mention a bi-quotidian type. And, yet, when a disease manifests itself several times daily by well-marked characters, and after having continued for a certain period (whether always the same or not) ceases during a given time, one or two hours, for example; then returns, again to cease, and that in three, four, or five different attacks, always distinct, and separated from each other by marked, though perhaps, unequal, intervals, how must we characterise it? Is it not merely a kind of intermittent, but a real intermittent?"

Dr. Mélier first applied these ideas, a few years since, to the treatment of a case of *infantile convulsion*. It occurred in a child six weeks old, and had resisted every means of relief for 48 hours. Death seemed inevitable, when the author, observing there were marked intervals in the progress of the affection, recommended one-grain doses of quinine every hour. The success was complete. Since that period he has accumulated a great number of facts confirmatory of this practice, and many of the best practitioners of Paris have furnished him with corroborative evidence.

"For these six years past, when the first case occurred, a great number of facts observed in reference to this point have confirmed me in my ideas, and in the propriety of the practice founded upon them. At present, whenever I am called to an infant affected with convulsions, (I do not speak of those which are purely symptomatic, and depending upon some obvious local suffering, as indigestion, teething, &c. offer a special means of relief—but I mean convulsions usually called, for want of a better term, essential, *i. e.* arising from a disordered state of the nervous system, independent of obvious lesion)—if these occur, as is usually the case, by crises or attacks, separated by longer or shorter intervals of repose,

I then look upon the affection as an intermittent, and whether the interval consist of but one, or of several hours, I give the quinine, and I can declare truly, that I have often been enabled to arrest the disease in the most ready and unhoped-for manner. I am convinced that I have, in this way, saved the lives of many infants, who, treated in another manner, seemed to me destined to certain death.

"It has been remarked, by many authors, that bark and its various preparations never succeeded better than in those cases, in which the access of the paroxysm was marked by distinct shivering, or at least coldness. Now, if an infant, who is about to suffer from the convulsive attack, be observed, I will not say that a true shivering takes place, but there is certainly, in many cases and in different degrees, that precursory spasm so well described by Cullen, that concentration upon the internal organs which precedes a severe reaction. The infant becomes pale, its lips are discoloured, and its cheeks frequently chilled; and then comes on the muscular action characterising convulsion. Does not this progress of the symptoms, which I have more than once observed, authorize a far greater analogy between certain convulsions of infancy and intermittents, properly so called, than I have sought to establish; and does it not furnish yet another motive for employing the quinine?" 560—2.

Dr. Mélier alludes to the observations of MM. Piorry and de Lens, which were made even prior to his own, although not founded upon the same reasoning. M. Piorry recommends the quinine in cases of cephalic irritation in infants, believing that mere alternation of redness and paleness of the cheeks furnishes a sufficient indication for its employment. But Dr. M. states, that the perusal of the cases adduced proves to him that good only resulted from its use in those of them in which intermittence, however short, was present. M. de Lens, who has long employed the quinine, in a greater variety of affections than most persons, furnished the author with a statement that the majority of febrile affections offer intermittence at their commencement, and that, if at this period quinine were administered, a cure might forthwith be effected. The obscurity of the interval usually prevents its recognition by the practitioner, and the affection then becomes established and continuous, and incapable of relief by this medicine. He says, similar observations may be made regarding many of the cerebral and convulsive affections of children, diseases of women, originating in distress of mind, &c., in many affections of an ambulatory character, as some cases of gout, rheumatism, neuralgic pains, and visceral phlegmasia. In many of these cases, he adds, in which the intermittence is very doubtful, the quinine is usually harmless at best, and often very serviceable.

Dr. Mélier has found this medicine also applicable to cases of eclampsia, obstinate hiccough, neuralgia of the uterus, rectum, and other viscera. Intermittent neuralgiæ, of the ordinary character, have been long successfully treated by its means, but this has not been the case when the affection has returned at the short intervals here described. He thus concludes:—

"I will not relate any more examples, although I could easily furnish them. Nervous affections are not the only diseases which present them, for they may be found in fevers, hæmorrhages, &c. Whooping-cough, if I mistake not, has also furnished them. I believe, too, I have said enough to establish the fact, that, besides the intermittent affections generally admitted to exist, there are

others, with short or abridged types, of the same nature, and presenting the same indications.

"I see intermittence whenever I see an obvious alternation of symptoms and cessation, however short the intervals may be. But in proportion as the attacks approach each other more nearly, it is obvious that the short intervals which separate them must be more actively employed, and carefully seized. The maxim of the Father of Medicine; *Occasio præceps*, was never more applicable than here.

"Moreover, intermittent affections with short periods, are, like ordinary intermittents, more or less distinct, and their intervals more or less complete; so that they may present only the *remittent* form—a form in which an element of continuity seems combined with one of intermittence; or rather there exists here a local affection, of more or less consequence, to which are added, from time to time, periodic phenomena. Such cases are by no means rare. Here, too, quinine is indicated, and will be often found useful. But here, as in the ordinary intermittent, its success will never be so complete as when we have to do with an uncombined intermittent. The condition of the disease will only be simplified, by removing from its permanent form, all that is intermittent or periodical." 569.

XII. PULMONARY EMPHYSEMA CONSIDERED AS A CAUSE OF DEATH. By Dr. *Prus*.

Notwithstanding the nature of pulmonary emphysema has received much illustration from recent observers, many questions regarding it yet remain in an undecided state. But the author, in the paper before us, confines his attention to the inquiry to what extent may this affection become the immediate *cause of death*. Laennec and Louis do not believe that it tends to shorten life, except through the instrumentality of some other disease; but other celebrated men, as Breschet, Magendie, &c., hold different opinions. Cases showing that pulmonary emphysema has little effect upon the duration of life are numerous; but these, negative facts as they are, must not be allowed to destroy the value of positive facts proving the gravity and danger of the affection. The author quotes two of these, already published, and adds eight others from his own practice. Facts of this description are of importance, not only for the decision of the true pathology, but also in reference to medical jurisprudence.

Prior to relating his cases, he thus delivers his opinion upon the nature of the disease.

"After an attentive and frequently repeated examination of the subject, it is clear to me that pulmonary emphysema is neither more or less than the infiltration of the air into the intervesicular, interlobular, and subpleural cellular tissue;—these three designations characterizing three different stages of the same affection.

"I am ignorant of, and I believe it is difficult to ascertain, what degree of distention the pulmonary vesicles may be subjected to without bursting; and the dilatation of the unbroken vesicles is a thing difficult of proof. M. Bouvier states, that all that has been written upon this subject must be subjected to a renewed examination; and although I am also of this opinion, I believe I have seen some cases of dilated vesicles, recognizable by the manner in which they were grouped towards the termination of the bronchial ramuscule. I may add my opinion, that a dilatation of the vesicles, which cannot pass such very narrow

limits, without inducing a rupture, is a very slight lesion, and is only of importance considered as the commencement of a pulmonary emphysema, *i. e.* the passage of air into the intervesicular tissue. Reasons derived from anatomy, physiology and pathology, may assist our solution of the question which now occupies us.

"The small size of the vesicles of a healthy lung renders them hardly perceptible, and it is not to be supposed they can reach ten and more times this size without rupture of their fragile walls. Insufflation of a healthy lung performed with moderation, produces a dilatation of its volume which becomes dissipated by the contractility of its own structure. But if the insufflation has been forcible, the dilatation continues permanent. It is then unequal, the air traversing in various directions, and when the insufflation has ceased, only a partial contraction takes place, leaving projections and inequalities on its surface. In the first case the insufflation has distended without rupturing the cells, and in the second, the vesicles have become ruptured, causing an effusion of air into the intervesicular structure, and which, continuing there, has prevented the lung resuming its primitive volume. It is this fact that leads to the practical rule for the performance of insufflation for asphyxia in the gentlest manner. I have seen a case of asphyxia from hanging, in which the vesicles were ruptured and the air infiltrated. M. Devergie, who has filled the office of Inspector of the Morgue for several years, states that, in all the drowned persons brought there, a rupture of the pulmonary vesicles is found to have been caused by the mere forcing back of the air they contain by the water.

"Pathology confirms these views; for, in comparing the emphysematous with the healthy lung, the permanent distention of the one is contrasted with the subsidence of the other under influence of atmospheric pressure. And this arises from the different localities of the air in the two cases. Moreover, the comparative ease with which the air can be pressed from one part to the other proves it is contained in the freely intercommunicating cellular tissue, and not in the air-cells, which communicate only with the bronchial ramifications." 664–6.

Dr. Prus, having detailed the cases and their post-mortem examinations, considers that he may fairly declare death to have been caused by *asphyxia*, occasioned by the pulmonary emphysema, seeing that there was no other means of accounting for its production. The patient, a prey to habitual dyspnœa, which occasionally becomes almost suffocative, and manifesting a greater or less degree of cyanosis, at last dies; and on examination marked pulmonary emphysema is found, the heart and great vessels are in a normal condition, (except in some instances of slight hypertrophy with dilation of the right ventricle, which has been proved by Laennec and Louis to be consecutive upon pulmonary emphysema,) no œdema present; the blood in the cavities of the heart black and oily-looking. The vessels of the brain and its membranes gorged with black non-coagulable blood. It is impossible not to seize the connection of the facts of the patient presenting all the signs of defective changes in the blood, and the presence of a disease which in a greater or less degree presented an obstacle to the due hæmatosis. In seven out of the ten cases, the patient was between 56 and 79 years of age, when the cells would have become irregular, dry, and fragile—thus offering every facility for the production of the disease. Frequent opportunities of examining the condition of the parts in broken-winded horses confirm the above conclusions.

Another series of confirmatory observations may be adduced from the

fact, that several diseases, which would not otherwise have caused the patient's death, become at once mortal when complicated with this one.

"Thus a Winter does not occur wherein we do not observe in our infirmaries for the aged a great number of patients seized with pneumonia of so very limited an extent, that frequently it only becomes mortal, because a more or less considerable portion of the lung, being affected with emphysema, is unable to effect the requisite changes in the blood. How frequently too have affections of the heart, which could not be said to menace life, except at some distant epoch, become suddenly mortal, owing to this complication." 711.

Upon the connexion of Pulmonary Emphysema with *Asthma*, we have the following observations:—

"To seek, as some do, to explain all the phenomena of asthma by pulmonary emphysema, is to commit a serious error. Those who refuse to be led away by prevailing theories, will recognize in asthmatics three circumstances, which are often united, but may exist separately, viz. the nervous affection, pulmonary emphysema, and bronchitis.

"The neurosis, which is the sole essential condition of asthma, may exist a long time without emphysema or bronchitis. Every physician has seen patients who, after violent paroxysms of asthma, entirely recover perfect freedom of breathing, of motion, and of exercise of all their powers. It is for this neurosis, whether simple or complicated with emphysema or bronchitis, that opium has been prescribed with such constant success by Floyer, Laennec, Louis, and others.

"Pulmonary emphysema, which might be expected to be, and frequently is, the consequence of the deep and violent inspirations of asthmatics, may arise also from other causes as violent muscular efforts, &c., and need not be accompanied by any of the signs of asthma. M. Louis cites three cases of undoubted pulmonary emphysema, in which the patients suffered from no difficulty of breathing.

"Bronchitis, which, in a great number of cases of asthma, is the sole determining cause of the paroxysm, and in almost all adds singularly to the frequency and intensity of the paroxysm, is not necessarily a companion of either nervous asthma or pulmonary emphysema." 700.

The following are the author's conclusions:—

"1. The seat of pulmonary emphysema is the intervesicular, interlobular, and subpleural cellular tissue. 2. M. Louis is correct in his statement, that when pulmonary emphysema is once produced it always remains. 3. It is generally the case also that the extent and degree of pulmonary emphysema are in direct proportion to its duration. 4. This affection may, by gradually diminishing the hæmatosis, produce a slow death, long foreseen, and constituting the aerian phthisis of Storck. 5. Under other circumstances, it may produce sudden or almost sudden death—these being the cases to which medical legists should especially direct their attention. 6. When, in the absence of any other organic lesion sufficient to account for death, we find, in cases of sudden death, a well developed pulmonary emphysema, a careful examination of the blood should be made. If this is found blackish, fluid, and oily, there is strong reason to believe that death has arisen from asphyxia, produced by the pulmonary emphysema." 721.

XIII. ON THE POISONOUS PROPERTIES OF SULPHATE OF QUININE. By Dr. *Mélier.*

The timidity with which this medicine was administered at its first introduction, has, according to Dr. Mélier, been succeeded in France by an undue degree of rashness. He especially alludes to the enormous doses (about 100 grains per diem) given by M. Briquet in acute articular rheumatism. Soon after these were recommended, the author and Magendie administered large quantities to several dogs. Most of these animals died, and their lungs were found congested and infiltrated with blood, while their substance in many parts was converted into a spleen-like substance. The blood was in a great measure deprived of its coagulability, the clot softened, diffluent, separating easily from the serum, which remained discoloured and thick, holding the colouring matter in solution. It is important, in a therapeutic point of view, to observe that the quinine acted far more energetically on the animals, when given fasting, and when dissolved in sulphuric acid, than when given upon a full stomach, or in its partly soluble condition.

In reference to the effects of too large doses on man, it is to be remarked that many writers had noticed the occasional ill effects of bark, prior to the discovery of quinine, when administered too largely. The author reviews in succession the various cases, giving his authorities, in which quinine has been manifestly hurtful. *Death* is distinctly traced to its use in four cases of articular rheumatism, presenting no especial marks of danger, and occurring within a short period. Delirium and coma, paralysis, epilepsy, pneumonia, hæmaturia, gastralgia and diarrhœa, are among its ill effects. *Deafness*, too, is a pre-eminently common effect. Moderate doses of quinine are indeed sometimes followed by temporary deafness, but after excessive doses it may become incurable.

These accidents are reducible to three categories or degrees. 1. When they effect the nervous system, seeming to be a mere exaggeration of the regular mode of action of the medicine. 2. When the influence is extended to the circulation, whence congestion, pneumonia, hæmaturia, and cerebral mischief. 3. Complete prostration of power, coma, and death.

These observations may throw some light upon the mode of action of the remedy. Formerly, when fears of the ill effects of bark or quinine were expressed, these were directed to the possibility of its producing inflammatory affections of the stomach or intestines; but, although these may be produced they are neither of the same extent or probability as supposed. It is remarkable indeed how large a dose of quinine the stomach will support. It is not therefore the local but the general action of this substance that is to be dreaded. Absorbed into the blood, it changes the constitution of this fluid, depriving it of its coagulability, and acting upon it, when in sufficient dose, in the same manner as many other poisonous agents. Its absorption into the blood and elimination from it, seems to take place very rapidly, as it has been detected in the urine in a very short time;—from which fact the precept may be deduced, not to administer it at too long a period prior to the paroxysm it is directed against. Convinced from the above researches of the danger of these

large doses, the author is no less so of their uselessness. Prompt cures have been procured by moderate doses, in the various diseases to which the medicine is applicable, and the having recourse to such extraordinary quantities he attributes to a prevailing rage for excessive doses (perhaps a re-action from former timidity,) by which some think everything is to be accomplished.

The author protests against any desire of underrating the utility of quinine, and appeals to a paper of his, which we have already noticed, recommending an extension of its employment to several affections, in which it has not been customary to employ it. He considers it as the most precious of all the agents which have enriched therapeutics. Moreover, in the very affection in question, namely, articular rheumatism, he sees reason, from the intermittence which is usually present, to approve of its administration; and adverts to the fact that bark has been recommended by Morton and others for this disease, and the quinine itself employed by others with variable success. He only protests against the scruple and other large doses which tend at once to dishonour the medicine, and to compromise the safety of the patient.

We have left unnoticed the following papers. A Case of Severe Injury to the Brain attended by no serious symptoms, although accompanied by extensive loss of substance. An Essay upon Phthisis in Martinique. A Paper on Hypochondriasis—and one by Dr. Foville upon the Communications between the Cerebrum and spinal-marrow. The three first present little worthy attention; and the last requires a fuller analysis than our limits now permit. We hope to return to it at a future opportunity.

A Treatise on Food and Diet, with Observations on the Dietetical Regimen suited for Disordered States of the Digestive Organs; and an Account of the Dietaries of some of the principal Metropolitan and other establishments for Paupers, &c. &c. &c. By *Jonathan Pereira*, M.D. F.R.S. & L.S. London, Longman, &c. &c. 1843.

We already possessed in our language several works on the Materia Alimentaria, viz. Cullen's celebrated works on that subject, Dr. Paris's deservedly popular work "on Diet," with many others of various degrees of merit. The present treatise, however, differs from its predecessors in many particulars. In the first place it contains a tolerably full account of the *Chemical Elements* of the food; 2dly, it is remarkable for the increased space devoted to the consideration of *Alimentary Principles*, after which the subject of *Compound Aliments* is considered. This plan of separately considering *Alimentary Principles* and *Compound Aliments* the author has adopted from Tiedemann. The work is divided into Two Parts. In the first part we have the chemical elements of the food, the *Alimentary Prin-*

ples of the Food and *Compound Aliments* discussed at considerable length. In the *second Part*, the subject of DIET, more properly so called, is treated of, viz. the Digestibility of Food—the Times of Eating—Dietaries for various Classes of Persons, as Dietaries for Children—Dietary for the Naval Service—for the army—for Paupers—for the sick—for the Insane, &c. We shall without further preamble proceed to Part I.

PART I.—OF FOODS.

The substances employed as food by man consist of certain compound bodies termed *Alimentary Principles*, which, by their mixture or union, constitute our ordinary foods: these may be called *Compound Aliments*.

Thus meat (a compound aliment) consists principally of fibrine, albumen, gelatine, hæmatosin, fat and water (alimentary principles.) Alimentary principles are themselves compound substances. They consist of two, three, four, or more *simple or undecompounded bodies*, called *elements*. These are the *Chemical Elements*. Thus fibrine (an alimentary principle) is composed of carbon, hydrogen, nitrogen, oxygen, phosphorus and sulphur, (chemical elements.)

With respect to the author's plan of arrangement, he proposes to consider—

1st. The Chemical Elements of Foods.
2. The Alimentary Principles.
3. The Compound Aliments.

A living body, says the author, has no power of forming elements or of converting one elementary substance into another; and it therefore follows that the elements of which the body of an animal is composed must be the elements of its food. The essential constituents of the human body are thirteen; and the same, therefore, must be the elements of our food.

Chemical Elements of the Food of Man.

1. Carbon.	5. Phosphorus.	8. Chlorine.	11. Potassium.
2. Hydrogen.	6. Sulphur.	9. Sodium.	12. Magnesium.
3. Oxygen.	7. Iron.	10. Calcium.	13. Fluorine.
4. Nitrogen.			

These substances he now proceeds to notice separately.

1. *Carbon.*—In the pure state carbon constitutes the *diamond*. In its impure forms carbon constitutes *plumbago* (black lead), and *charcoal*, (animal and vegetable).—Carbon is an essential constituent of every living or organised tissue, both vegetable and animal; hence it is a necessary ingredient of food, and Nature has accordingly supplied it in the aliment which she has provided for all living beings in the early stage of their existence. Thus it is an element of the organic substances composing seeds, and from which the embryo plant derives its first nutriment. The yolk of egg (the food of the embryo chick,) and milk, (the food of the young mammals during the first period of existence after birth) also contain it. Different kinds of foods have been found to contain different quantities of this element.

The quantity of carbon consumed, in the form of food, by different individuals and at different times, varies very much. Among the circumstances, to which such variations may be attributed, we may reckon age, sex, peculiarities (individual or national,) temperature and density of the air, occupation, and amount of clothing. According to Liebig, an adult taking moderate exercise consumes about 15½ oz. avoirdupois of carbon daily—all this quantity of carbon, or nearly all of it, is thrown out of the system by the lungs and skin in the form of carbonic acid, the carbon uniting with the oxygen, which is derived from the air, either by the lungs or skin, or both. By this union of carbon with oxygen, in whatever part of the system it is effected, heat must be evolved. According to Despretz, one pound of pure charcoal evolves, by its combustion in oxygen gas, sufficient heat to raise the temperature of 78 lbs. of water from 32° Fahr. to 212° Fahr.

Liebig has shewn that, by the conversion of starch or sugar into fat, oxygen is supplied to the system; and that, by the union of this disengaged oxygen with carbon (from the bile, for instance,) heat is developed. Suppose one equivalent of carbonic acid CO_2, and 7 equivalents of oxygen O_7, to be abstracted from one equivalent of starch, $C_{12}H_{10}O_{10}$, we have, in the residue, the empirical formula for fat, $C_{11}H_{10}O$.

Relative Composition of Starch and Fat.

1 eq. Starch . .	$C_{12}H_{10}O_{10}$	1 eq. Fat	$C_{11}H_{10}O$
		1 eq. Carb. acid .	$C\ O_2$
		7 eq. Oxygen . .	O_7
			$C_{12}H_{10}O_{10}$

The oxygen, thus presumed to be separated from the starch, can only be disengaged in the form of either carbonic acid or water or of both; and consequently, must have combined with carbon or hydrogen, or both. Liebig has adduced several reasons for presuming that heat must attend the formation of carbonic acid under these circumstances. "Thus," says he, "in the formation of fat, the vital force possesses a means of counteracting a deficiency in the supply of oxygen, and, consequently, in that of the heat indispensable for the vital process."

Under ordinary circumstances, the carbon necessary for the support of animal heat is supplied by the food, but when food is withheld, the fat of the body is consumed; its carbon is converted into carbonic acid, and its hydrogen into water. Experience has shewn that the heat of the blood is the same in all climates and in all atmospheric temperatures. Hence a larger quantity of combustible matter is required in cold climates and cold weather, than in hot climates and in warm weather—and hence, also, the necessity of a more liberal supply of food in cold weather. "He who is well fed," observes Sir John Ross,* "resists cold better than the man who is stinted, while the starvation from cold follows but too soon a starvation in food. This, doubtless, explains in a great measure the resisting

* Narrative of a Second Voyage in Search of a North-West Passage; p. 200. London, 1835.

powers of the natives of these frozen climates, their consumption of food, it is familiar, being enormous, and often incredible."

Those persons who are at all familiar with the accounts which have been published regarding the natives of the arctic regions, must be well aware of their gormandising powers. Captain Sir W. E. Parry, (Second Voyage for the Discovery of a North-west Passage,) states, that as a matter of curiosity, he one day tried how much food an Esquimaux lad would consume, if freely supplied. "The under-mentioned articles were weighed before being given to him; he was twenty hours in getting through them, and certainly did not consider the quantity extraordinary."

	lbs.	oz.
Sea-horse flesh, hard frozen ..	4	4
Ditto, .. boiled	4	4
Bread and bread-dust	1	12
Total ..	10	4

The fluids in fair proportion, viz.

Rich gravy soup,	1½	pint.
Raw spirits ..	3	wine glasses.
Strong grog ..	1	tumbler.
Water	1	gallon 1 pint.

Sir John Ross, in his *Narrative*, states, that an Esquimaux "perhaps eats twenty pounds of flesh and oil" daily.

The kinds of food which theory points out as best suited for the natives of these colder climates, scil. foods abounding in carbon and hydrogen, as fats and oils, which contain from 66 to 80 per cent. of carbon are precisely those used by them.

Our author considers it erroneous in Liebig to ascribe the voracity of the inhabitants of the colder regions to the influence of cold only.

The Hottentots and Bushmen of Southern Africa, are well known to be beastly gluttons; a circumstance which cannot be ascribed to the temperature of their climate, while "the inhabitants of the Alpine regions of Southern Europe, demand no such extravagance of food, nor are even the people of Lapland and the Northern extremity of Norway conspicuous for such eating; as is not less true of the Icelanders."* The author conceives, that this voracity is ascribable, in part at least, to some instinct or propensity exercised by some portion of the brain. It is obvious, from what has been now stated, that much less heat is evolved when there is a deficiency of food; it is equally evident that, in tropical climates, and even in more temperate climates, during the Summer, a smaller quantity of food suffices to keep up the temperature of the body; and, under such circumstances, substances containing a less proportion of carbon, are better adapted for preserving the health.

Liebig ascribes the frequency of diseases of the liver in hot seasons and tropical climates, to the accumulations of carbon in the system. If, the external temperature being high, we continue to consume large quantities of food, there will be an excess of carbonaceous matter in the system. The effect of high temperature, excess of food and want of exercise, on the state of the liver, is well shewn in the goose. The same reasoning will apply, at least in part, to the frequency of hepatic disease among Europeans residing in tropical climates, and who continue to employ the

* Sir John Ross, *op. supra cit.*

same dietetical system which they followed in their own more temperate climate.

Hydrogen.—Hydrogen, like carbon, being an essential constituent of every organised tissue, is, therefore, a necessary ingredient of the food of every living being, both vegetable and animal. In reference to the quantity of hydrogen they contain, alimentary principles may be arranged in three groups: the first containing those substances whose oxygen and hydrogen are in the same relative proportion as in water; the second, including those whose oxygen is to the hydrogen in a less proportion than in water, or which contain an excess of hydrogen; and the third, comprehending those whose oxygen is to the hydrogen in a proportion greater than is necessary to form water, or which possess an excess of oxygen.

Relative Quantity of Hydrogen and Oxygen in Alimentary Principles.

Group 1. Principles whose Oxygen and Hydrogen are in the same ratio as in water.	Group 2. Principles containing an excess of Hydrogen.	Group 3. Principles containing an excess of Oxygen.
Acetic Acid. Starch. Sugar. Gum.	Oil. Alcohol. Malic. Acid. Fibrine, Albumen, Caseine } Animal and Vegetable. Gluten. Gelatine.	Pectine. Citric Acid. Tartaric Acid.

GROUP 1. *Alimentary Principles whose Oxygen and Hydrogen are in the same ratio as in water.*—The substances of this group may be regarded as *hydrates of carbon*, since they consist of carbon and water, (or its elements.) Their composition is as follows:—

Hydrates of Carbon.

Acetic acid	12 C	+	9 water.			
Starch	12 C	+	10 water.			
Cane sugar	12 C	+	10 water	+	1 water.	
Gum	12 C	+	10 water	+	1 water.	
Sugar of milk	12 C	+	10 water	+	2 water.	
Grape sugar	12 C	+	10 water	+	4 water.	

It is obvious that these foods can yield carbon only to be oxidated in the system, since the hydrogen is already in combination with oxygen. This, therefore, is a sufficient explanation of the fact mentioned by Liebig, that the graminiverous animals expire a volume of carbonic acid equal to that of the oxygen inspired; in other words, there is no loss of oxygen, since one volume of carbonic acid gas contains a volume of oxygen. In a

state of nature, a large proportion of the food of these animals consists of principles (starch, sugar, and gum,) whose hydrogen is saturated with oxygen. In no other way can we account for the fact just referred to: for, as Liebig correctly observes, "at the temperature of the body, the affinity of hydrogen for oxygen far surpasses that of carbon for the same element," and, therefore, the return of an equal volume of carbonic acid by expiration is an evidence that there was a want of hydrogen for the oxygen to combine with.

GROUP 2. *Alimentary Principles, whose Oxygen is to the Hydrogen in a less proportion than in Water, or which contain an excess of Hydrogen.*—This group includes both nitrogenised and non-nitrogenised food. If we suppose the oxygen of those principles to be combined with hydrogen in the ratio to form water, there will remain, for each, an excess of hydrogen; the amount of which, however, varies in different substances. The author here gives a table, constructed on this view, shewing the excess of hydrogen which each principle contains, the amount of carbon in each being calculated to be the same:—

Alimentary Principles containing excess of Hydrogen.

Malic acid (anhydrous)	=	48	C	+	18	water	+	6	H.		
Fat (lard)	=	48	C	+	4.5	water	+	38.5	H.		
Alcohol	=	48	C	+	24	„	+	48	H.		
Proteine	=	48	C	+	14	„	+	22	H	+ 6 N.	
Albumen	=	48	C	+	14	„	+	22	H	+ 6 N + S + P.	
Fibrine	=	48	C	+	14	„	+	22	H	+ 6 N + 2 S + P.	
Caseine	=	48	C	+	14	„	+	22	H	+ 6 N + S.	
Gelatinous tissues, tendons	=	48	C	+	18	„	+	23	H	+ 7.5 N.	
Chondrine	=	48	C	+	20	„	+	20	H	+ 6 N.	

The ultimate changes which these constituents of food undergo in the system, are the conversion of the carbon into carbonic acid, and the hydrogen into water. "It signifies nothing," says Liebig, "what intermediate forms food may assume, what changes it may undergo in the body, the last change is uniformly the conversion of its carbon into carbonic acid; and of its hydrogen into water. The unassimilated hydrogen of the food, along with the unburned or unoxidised carbon, is expelled in the urine, or in the solid excrements.

GROUP 3. *Alimentary Principles, whose Oxygen is to the Hydrogen in a proportion greater than is necessary to form Water.*—None of the substances of this group, which includes pectine (vegetable jelly) and some vegetable acids, are nitrogenised. The following able represents the composition of these principles, on the supposition that the hydrogen is combined with oxygen in the ratio to form water, the calculation being made for the same amount of carbon in each:

Alimentary Principles containing an excess of Oxygen.

Pectine	:	12	C	+	8.5	water	+	5 O.
Citric acid (dry)	:	12	C	+	5	„	+	6 O.
Tartaric acid (dry)		12	C	+	6	„	+	9 O.

All the hydrogen and part of the carbon of these principles are, therefore, in combination with oxygen.

3. *Oxygen.*—Oxygen is a necessary ingredient of our food. The following table, taken from Liebig, gives the relative proportions of carbon and oxygen in several alimentary principles:

In Fats (on an average) .	120 equiv. of Carbon	10 equiv. of Oxygen.
" Fibrine, albumen and caseine	120 "	36 "
" Starch - - -	120 "	100 "
" Cane sugar - -	120 "	110 "
" Gum - -	120 "	110 "
" Sugar of milk - -	120 "	120 "
" Grape sugar - -	120 "	140 "

As the carbon and hydrogen of the food are ultimately for the most part thrown out of the system in combination with oxygen—that is, in the form of carbonic acid and water—it follows that those foods which contain a small proportion of oxygen only must consume a greater amount of atmospheric oxygen than those which possess a larger quantity of this element. Hence it is clear that the quality of the food must affect the activity of the respiration. Dr. Fyfe has found the consumption of oxygen to be greatly reduced by the employment of vegetable diet.

The influence exercised by matters taken into the stomach on the process of respiration is well illustrated in the case of the vegetable salts of potash or soda. If the acetate, citrate, or tartrate of either of these alkalies be swallowed, the salts suffer partial decomposition in its passage through the system—its base can be detected in the urine; but its acid has disappeared, and is replaced by carbonic acid. To effect this, a considerable quantity of oxygen must be consumed. In the case of acetate of potash, no less than eight equivalents of oxygen are required to convert the carbon of every atom of acetic acid into carbonic acid.

Conversion of Acetic Acid into Carbonic Acid and Water.

1 equiv. acetic acid $C_4O_3H_3$	4 equiv. carbonic acid C_4O_8
8 equiv. oxygen . . $-O_8-$	3 equiv. water . . . . $-O_3H_3$
Total . . $C_4O_{11}H_3$	Total . . $C_4O_{11}H_3$

When we take an ordinary effervescing draught composed of tartaric acid and bicarbonate of soda, there is developed, by their mutual reaction, tartrate of soda, which, in its passage through the system, suffers decomposition. Its tartaric acid disappears, and is converted into carbonic acid and water by means of oxygen.

Conversion of Tartaric Acid into Carbonic Acid and Water.

1 equiv. tart. acid, $C_4O_5H_2$	4 equiv. carbonic acid, C^4O_8 —
5 equiv. oxygen . . $-O_5-$	2 equiv. water . . . . $-O_2H_2$
Total . . $C_4O_{10}H_2$	Total . . $C_4O_{10}H_2$

Now the eight equivalents of oxygen in the first case, and the five

equivalents in the latter instance, must be derived either from the organism or from the atmosphere. But, as Liebig justly observes, there is no evidence presented by the organism in itself that any of its constituents have yielded so large a quantity of oxygen; and we have a right, therefore, to infer, that it must have been derived from the air; and that these salts, in their passage through the lungs, appropriate to themselves the necessary amount of oxygen. But do they appropriate that which, if they were not present, would be otherwise employed in the organism? or do they consume an extra quantity of oxygen? We have no precise data on which we can satisfactorily answer this question. Liebig asserts, that they must consume a part of the oxygen, which would otherwise unite with the constituents of the blood; and "the immediate consequence," he observes, "of this, must be the formation of arterial blood in less quantity; or, in other words, the process of respiration must be retarded."* The necessity of this conclusion of Liebig our author cannot see; he has already shewn that the amount of oxygen consumed by respiration, is modified by the quality of the food, and considers it not improbable, therefore, that the passage of the above-mentioned salts through the lungs may occasion a temporary augmented consumption of oxygen; but the evidence for or against this notion is yet to be adduced.

Nitrogen or *Azote.*—Nitrogen is distinguished from the three preceding substances by the indifference which it manifests to enter into chemical combination with other bodies. It is an essential constituent of every animal tissue. Fat and water are non-nitrogenised components of the animal body, but they are not organised or living substances. It is obvious, therefore, that for the development, growth, nutrition, and renovation of living animal parts, nitrogen is essential; and accordingly we find, that Nature has supplied it in the food which she has furnished for the young animal; it being a constituent of the albumen of the yolk of the egg, (the food of the embryo chick), and of the caseine of the milk, (the aliment of the young mammal). Several vegetable and animal substances contain no nitrogen, and various articles of food contain it in different proportions.

Nitrogenized foods alone being considered as capable of conversion into blood and of forming organised tissues, these have been called by *Liebig* the *plastic elements of nutrition.* What then is the use of the substances in the food which are destitute of nitrogen, and which we know to be essential to animal life? Liebig has shown that these are exhausted in the production of animal heat, being converted into carbonic acid and water: in other words, their use is to support the process of respiration by yielding their carbon and hydrogen, the oxidation of which is attended with the developement of heat. These non-nitrogenised substances he therefore calls *elements of respiration.*

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* May not the refrigerant effects of these salts be explained in this manner, and their consequent utility in febrile diseases?—REV.

Nitrogenised Substances, or *Plastic Elements of Nutrition.*		*Non-nitrogenised Substances*, or *Elements of Respiration.*	
Vegetable	Fibrine.	Fat,	Pectine,
———	Albumen.	Starch,	Bassorine,
———	Caseine.	Gum,	Wine,
Animal	Flesh.	Cane Sugar,	Beer,
———	Blood,	Grape Sugar,	Spirits.
		Sugar of Milk,	

The opinion that nitrogenised foods alone nourish the tissues, is supported by several arguments. The first is, that *as the animal tissues contain nitrogen as one of their essential constituents, and as this element cannot be created in the system, it must be derived from either the food or the atmosphere; but, as it is not absorbed from the atmosphere in the vital process, it must be obtained from the food.*

The entire force of this argument depends on the truth of the assertion, that "no nitrogen is absorbed from the atmosphere." Various experiments have been instituted by various physiologists on this point, and with the most discordant results. Müller says, that "the conclusion to be deduced from all these experiments seems to be, that, during respiration, nitrogen is both absorbed and exhaled by the blood." In fact, some of the best physiologists of modern times admit the absorption of nitrogen. Hence, then, till it be demonstrated that "no nitrogen is absorbed from the atmosphere," the above argument goes for nothing; it is in fact a downright begging the question.

The second argument is, *that non-nitrogenised foods alone are incapable of supporting animal life.*—"This argument has not, however, much weight, since it is well known, that an exclusive diet of nitrogenised alimentary principles (gluten excepted) is also incapable of supporting animal life. Fibrine, albumen, or gelatine, taken separately, does not support life; even the artificial mixture of these principles is insufficient to preserve life—for dogs, thus fed, ultimately die with all the signs of complete inanition."

On reflection, we are very much inclined to think that the author has entirely mistaken the meaning of the question here; we think the import of it is, that no foods, but such as contain nitrogen, are capable of nourishing the tissues, or that foods, entirely destitute of nitrogen, are incapable of nourishing the tissues. Now Magendie, Tiedemann, and Gmelin, have satisfactorily proved the truth of this; the first found, that dogs fed exclusively on sugar and water died in from thirty-one to thirty-four days; the two latter experimenters found, that geese fed on sugar and water, or gum and water, or starch and water, died in from sixteen to twenty-four days.

Instead of the author's saying that "the second argument has not much weight," he should have said, that it is no argument at all; in as much as it is identical with, and just equivalent to, the question at issue—both the question, and the argument adduced in its support, are, what logicians call, identical propositions; they also come under the title of exclusive propositions; now, it is well known, that every exclusive proposition may be converted into an equivalent exceptive, and *vice versa*; now, by thus

converting these two exclusive propositions (the question and the argument) into their equivalent exceptives, we shall obtain two exceptive propositions precisely the same even to the very letter.

Question.—Nitrogenised foods alone nourish the tissues.

Equivalent exceptive.—No foods, *except nitrogenised foods*, nourish the tissues.

Argument.—Non-nitrogenised foods alone are incapable of nourishing the tissues.

Equivalent exceptive.—No foods, except nitrogenised foods, nourish the tissues.

Here the two exceptive propositions, obtained by converting the two exclusives, are identical to the very letter—and therefore the question and the argument adduced to support it, are equivalent, and so the author has allowed himself to be caught in that vulgar sophism, called a "begging of the question." In fact, he should have seen that the question regarded a matter of fact, and not a matter of reasoning; Magendie, Tiedemann, and Gmelin, saw the same thing, and therefore very properly had recourse to *experiment* and not to *logic*, for the ascertaining of its truth.

Not less strange is the reason given by the author for considering the "argument," as he calls it, as possessing but little weight; "since it is well known, he says, that an exclusive diet of nitrogenised alimentary principles is also incapable of supporting animal life." The reason assigned for the weakness of the "argument" has about as much to do with this unfortunate "argument" itself, as the present place of the moon in her orbit has to do with "the Repeal of the Union." What we find fault with in the author is, his acknowledging that to be an argument (though a weak one, he admits) which is identical with the *questio probanda*, and next, in assigning as a proof of such weakness a reason which is no reason at all. The alogy which makes so conspicuous a figure in the writings of some of our modern medical authors, affords abundant proof of the necessity of requiring of those who aspire to the rank of M.D.'s, some substantial certificates that they have received somewhat of a liberal education.

The third argument is, that *the food of all animals, herbiverous and carniverous, contains nitrogenised matters, identical in composition with the principal constituents of the blood and organised tissues of the animal body; and, therefore, the carbon, sugar, and starch, and the carbon and hydrogen of the fats and oils, are not required for the production of blood.*

The connexion between the consequence in this proposition and the antecedent is anything but striking. By the way, we should much like to know, whether these "arguments" are indebted for their existence as such, to the author; if so, among the many other charges which may be brought against him concerning them, the charge of infanticide, or at least that of child-exposure, is not the least.

The fourth argument is, that *the quantity of nitrogenised food, which herbiverous animals consume, is amply sufficient for the growth and development of their organs, and for the supply of waste.*

The opinions recently advanced with respect to the uses of nitrogenised and non-nitrogenised foods in the animal economy, are thus briefly stated by the author:—

1. Nitrogenised foods are alone capable of conversion into blood, and of forming organised tissues.

2. Nitrogenised foods which contain proteine, as albumen, fibrine, caseine and gluten, alone form the albuminous and fibrinous tissues.

3. Gelatine is incapable of conversion into blood; but it may perhaps serve for the nutrition of the gelatinous tissues (cellular tissue, membrane and cartilage).

4. Non-nitrogenised foods support the process of respiration by yielding carbon, and, in some cases, hydrogen, to be burnt in the lungs, and thereby to keep up the animal temperature.

5. Some of the non-nitrogenised foods contribute to the formation of fat, the carbon and hydrogen of which are ultimately burnt in the lungs, and thereby develope heat.

6. With the exception of the substance of cellular tissue, of membranes, and of the brain and nerves, all the organic materials of which the animal body is composed are derived from vegetables, which alone possess the property of producing compounds of proteine.

The author now states a few circumstances which appear to him to raise some difficulties to the unqualified admission of the opinions above referred to.

1. When benzoic acid, a non-nitrogenised substance, is taken into the stomach, it appears in the urine in the form of hippuric acid. This hippuric acid is probably formed by the elements of the benzoic acid, with the addition of those of lactate of urea.

1 equiv.	Urea . . .	$C^2N^2H^4O^2$		
1 equiv.	Lactic acid	$C^6—H^4O^4$	2 equiv. Chrystalized Hippuric acid . . .	$C^{36}N^2H^{18}O^{12}$
1 equiv.	Benzoic acid	$C^{28}—H^{10}O^6$		
	Total . . .	$C^{36}—N^2H^{18}O^{12}$		

It cannot, therefore be doubted, "that a non-azotised substance, taken in the food, can take a share, by means of its elements, in the act of transformation of the animal tissues, and in the formation of a secretion." Consequently, the possibility of the conversion of non-nitrogenised foods into nitrogenised constituents of the animal body, does not appear by any means improbable.

2. Liebig's explanation of the uses of nitrogenised and non-nitrogenised foods does not account for the fact stated by the Commissioners of the French Academy, that while fibrine, albumen, and gelatine, taken together or separately, are incapable of supporting animal life, gluten from wheat or maize is alone sufficient to satisfy complete and prolonged nutrition. As fibrine, albumen, and gluten, are said to be identical in composition, their nutritive powers ought to be equal.

The other objections to the recently advanced opinions, already alluded to, we shall here pass over. That non-nitrogenised substances are intended by nature to constitute part of the food of man and other animals, there are abundant proofs, as we find them in the aliments supplied by nature for animals during the first period of existence. Thus, in the yolk of egg we have a fixed oil—in milk we have sugar and butter, both non-nitrogenous principles. The craving of animals, too, for these substances,

and the fact already mentioned, that nitrogenised food alone cannot support life, afford ample proof that those principles are essential to health and life. .. .. ..

Alcohol is classed among the elements of respiration; and it cannot be doubted that it undergoes some changes in the animal economy. When taken into the stomach it is absorbed, and gets into the circulating mass. Now, how does it get out of the system? certainly not by the bowels, urine, or skin. A portion of it escapes by the lungs, and is recognizable by its odour in the breath; but the quantity in this way thrown out of the system is comparatively small, and is certainly disproportionate to that often swallowed. Moreover, it is principally when the quantity taken is very large, that it is most recognisable in the breath;—when, in fact, the formation of respiration is very imperfectly formed. What, then, becomes of it? By itself it cannot form tissues, since it is deficient in some of their essential ingredients, namely, nitrogen, sulphur, and phosphorus; and there is no reason to suppose that it contributes even in part, to the renovation of tissues. Liebig's suggestion, that it is burnt in the lungs, and thereby converted into carbonic acid and water, appears very plausible. To convert it into these substances, oxygen only is required: as may be thus shewn:—

Alcohol	$C^4H^6O^2$	Carbonic acid	C^4O^8
Oxygen	$——O^{12}$	Water	H^6O^6
Total	$C^4H^6O^{14}$	Total	$C^4H^6O^{14}$

By its oxidation in the lungs it must evolve caloric, and thus, when used in moderation, it serves to support the temperature of the body. This use of it in the animal system, appears to have been entirely overlooked by the Tee-totallers. Though alcohol thus supports the temperature of the body, it must be admitted to be an obnoxious fuel. Its volatility and the facility with which it permeates membranes and tissues, enable it to be rapidly absorbed; and, when it gets into the blood, it exerts a most injurious operation, before it is burnt in the lungs, on the brain and liver.

Nutritive Equivalents.—Several authors have attempted to form a scale of nutritive equivalents. Boussingault has suggested one, founded on the quantity of nitrogen contained in foods.

Scale of Nutritive Equivalents.

Substances.	*Equivs.*	*Substances.*	*Equivs.*
Wheat flour	100	Rice	177
Wheat	107	Buckwheat	108
Barley meal	119	Maize	138
Barley	130	Horse-beans	44
Oats	117	Peas	67
Rye	111		

It will be seen that, in this table, 44 parts of horse-beans, or 67 of peas, are represented as being equal in nutritive power to 100 parts of wheat

flour. This, as our author justly remarks, cannot be correct. Liebig admits, that though lentils, beans and peas, surpass all other vegetable food in the quantity of nitrogen they contain, yet that they possess but small value as articles of nourishment, because they are deficient in the component parts of the bones (subphosphate of lime and magnesia); they satisfy the appetite without increasing the strength.

Phosphorus.—This is a constituent of both animals and vegetables—it is an essential ingredient of albumen and fibrine and of all tissues composed of these principles. Nervous matter also contains it, as does also the brain—the bones too contain it—it is detected in the spermatic fluid and in the ovary. It being thus a necessary ingredient of the animal body, it must, of course, be an element of the food of animals. It is a constituent of the blood, the flesh and the bones of animals employed by men as food. Phosphorus is a constituent of most vegetable substances, being found in the ashes of plants, principally in the form of an earthy phosphate (lime or magnesia).

Sulphur.—This is a constituent of both animals and vegetables. Fibrine and albumen, and all tissues composed of these substances, contain it. The existence of sulphur in the very many animal substances in which it is found, serves to explain the evolution of sulphuretted hydrogen and hydrosulphuret of ammonia, by putrefying animal substances; excrement, for example. That sulphuretted hydrogen is evolved in privies is proved by its darkening the white paint, and by its blackening silver articles (watches, spoons, &c.) which have accidently fallen into the night-soil. Game, when very high, will sometimes discolour the silver fork used in eating it.

Sulphur is thrown out of the system in various excretions. Thus, the urine contains sulphates, in part formed by the action of the oxygen of the arterial blood on the sulphur of the metamorphosed tissues. In the saliva we meet an alkaline sulpho-cyanide; and, in consequence of the presence of this salt, the saliva possesses the property of reddening the sesqui-salts of iron. Metallic matter kept in the mouth becomes discoloured by the action of sulphur on it. The gold plates used to support artificial teeth, become incrusted with a film of metallic sulphuret. The system derives its sulphur from animal and vegetable substances used as food. Thus flesh, eggs and milk contain it. Vegetable fibrine (as of corn), vegetable albumen (as of almonds, nuts, cauliflowers, turnips, &c.), and vegetable caseine (as of peas and beans) contain it—it is chiefly abundant in the *cruciferæ*.

An infusion of *white* mustard strikes a blood-red colour with the persalts of iron, owing to the presence of sulpho-sinapisine. By this character white mustard is readily distinguished from black mustard. Both kinds of mustard flour charred in a tube evolve a sulphuretted vapour, which blackens paper moistened with a solution of acetate of lead. In the same way sulphur may be detected in cabbage, potatoes, and many other vegetable foods. It is from such substances that the sulphur of our system is derived.

Iron.—This is a constituent of most, if not all, organised beings. The quantity they contain, is, however, very small. Iron is an essential constituent of the blood, though, according to some recent experiments by Scherer, it is neither essential to hæmatosin nor necessary to the colour of the blood. The beneficial effects of chalybeates in the disease called anæmia, in which the blood is found to contain a smaller quantity of iron than in a state of health, favours the notion that the healthy colour of the fluid is in some way connected with the amount of iron contained in it. According to Denis, 1000 parts of the blood-corpuscles yield 2 parts of per or sesqui-oxide of iron. But, as the relative proportions of serum and blood-corpuscles are subject to considerable variation, it follows that the quantity of iron contained in a given weight of blood cannot be constant. The quantity of sesqui-oxide of iron obtained from 1000 parts of blood, varies, from 0·128 to 0·346, according to the authority just quoted. Liebig assumes the existence of a much larger quantity of iron in the blood. Iron is a constituent of the hair. Black hair contains most of this metal; white hair the least.

Most articles of food contain iron. It is a constituent of the blood found in meat. Veal must contain less of it than beef, since calves are usually bled copiously previous to death, by which an anemic state is induced. In the yellow fat of the yolk of egg this metal may be detected. Milk likewise contains iron in a state of phosphate. Traces of iron have been detected in most vegetable foods.

Chlorine.—This elementary substance is a constituent of the blood, the gastric juice, and several of the excretions, as the urine, saliva, tears and fæces. In the blood and the excretions it exists in combination with sodium, while in the gastric juice it is found combined with hydrogen, and thereby constituting hydrochloric acid.

As the chlorine of the blood is constantly being consumed in the formation of the gastric juice and secretions, it requires to be frequently renewed. Hence it is an indispensable constituent of our food; and is taken into the system in the form of the chloride of sodium or common salt, which contains 60 per cent. of chlorine.

Sodium.—This is a constituent of the blood, the animal tissues and the secretions. Owing to its presence, the ashes of animal substances (feathers, bristles, hairs, &c.) possess the property of communicating a yellow tinge to flame. This metal is taken into the system, chiefly in the form of a chloride, which contains 40 per cent. of the metal. This salt is used at our table as a condiment, and is a constituent of most animal foods. It is not an ordinary constituent of plants, unless they grow in the neighbourhood of the sea or other salt water—minute quantities of it are found in most of our common waters. Sodium is expelled from the system both in the form of chloride and of oxysalt. In the urine of carnivorous animals it exists in the form of sulphate and phosphate of soda.

Calcium.—This metal is a component part of all animals. In the higher classes it exists principally in the form of subphosphate of lime. Thus, the bones of the vertebrata contain this salt mixed with a small portion of

carbonate of lime. But the shells and crusts of invertebrated animals, as lobsters, oysters, &c. consist of carbonate of lime principally but mixed with a little subphosphate of lime. Muscles, nervous matter, liver, &c. and indeed all the animal solids, as well as the blood, contain calcium in the form of subphosphate of lime. The calcium of our system is derived from the animal, vegetable and mineral substances which we consume as food. Thus bones, flesh, viscera, blood, and milk of animals, yield us this metal —most vegetables also contain it—another source of calcium is common water, which usually contains both bicarbonate and sulphate of lime.

Magnesium.—Small quantities of this metal are found in the blood, teeth, bones, nervous matter, thyroid gland, and other parts of the body. It exists in combination with oxygen and phosphoric acid, and often with ammonia also. It is a constituent of both vegetable and animal foods.

Potassium.—Minute traces of potassium exist in blood, the solids, and several of the secretions of animals—this substance is a constituent of both animal and vegetable food—most plants which grow inland contain it; thus it is found in grapes and potatoes.

We now come to consider the contents of *Chap.* **2**, which treats of ALIMENTARY PRINCIPLES.

The first chapter we have just seen treats of simple or undecompounded bodies. Two or more of these simple bodies form, by their union with each other, certain compound substances termed *Alimentary Principles*, or *Simple Aliments;* and by the combination of the latter our ordinary foods, called compound aliments, are formed.

Some alimentary principles contain but two elements, as water. Others contain three, as sugar and fat. Proteine is formed of four elements, while fibrine and albumen contain six. Some aliments, as water and common salt, are derived from the mineral kingdom: others are obtained from the organized kingdom. Dr. Prout, in his work *On the nature and Treatment of Stomach and Urinary Diseases*, arranges alimentary principles into four classes, scil. the *aqueous*, the *saccharine*, the *oleaginous*, and the *albuminous*.

The author is induced by chemical and physiological considerations to adopt a different classification, and proposes the following:—

Classes of Alimentary Principles.

1. The Aqueous.
2. The Mucilaginous or Gummy.
3. The Saccharine.
4. The Amylaceous.
5. The Ligneous.
6. The Pectinaceous.
7. The Acidulous.
8. The Alcoholic.
9. The Oily or Fatty.
10. The Proteinaceous.
11. The Gelatinous.
12. The Saline.

1. *The Aqueous Alimentary Principle.*—With one or two very trifling exceptions water, in some form or other, seems essential to vitality. A very large proportion of the human body is water. The blood contains about 80 per cent., the flesh about 74 per cent. of water. So that we may lay

it down that the entire human body contains about three-fourths of its weight of water. But as by evaporation, as also by the processes of secretion and exhalation, part of this fluid is wasted or consumed, the necessity of the use of water as a drink becomes obvious. It is, in fact, more necessary to our existence than solid food. The sources of the water contained in the system are the aqueous drinks which we consume, as also the moisture contained in most of the solid substances employed as food. Water serves several important purposes in the animal economy: firstly, it repairs the loss of the aqueous part of the blood, caused by evaporation and the action of the secreting and exhaling organs; secondly, it is a solvent of various alimentary substances, and therefore, it assists the stomach in the act of digestion, though if taken in very large quantities, it may have an opposite effect, by diluting the gastric juice; thirdly it is probably a nutritive agent. It is not actually demonstrated that water yields up its elements to assist in the formation of organised tissues; that it may do so, however, is not improbable. From Liebig's observations it would appear that the hydrogen of vegetable tissues is derived from water; and it is not probable that the higher orders of the organised kingdom should be deficient in a power possessed by the lower orders.

The water which constitutes an essential part of the blood and of the living tissues, assists in several ways in carrying on the vital processes. It is from water that the tissues derive their properties of extensibility and flexibility. Lastly this fluid contributes to most of the transformations which occur within the body. As a solvent it serves to aid digestion, and also to effect other changes. It is probable that the conversion of uric acid into urea, by the action of oxygen, is effected by the agency of water which holds the acid in solution; for in animals which drink much water, no uric acid, but urea only, is found in the urine; while in birds which seldom drink, and in snakes, uric acid predominates.

Conversion of Uric Acid into Urea.

1 eq. Uric acid	$C^{10}\ N^4\ H^4\ O^6$	2 eq. Urea . .	$C^4\ N^4\ H^8\ O^4$
4 eq. Water . .	$—\ —\ H^4\ O^4$	6 eq. Carbonic acid	$C^6\ —\ —\ O^{12}$
6 eq. Oxygen .	$—\ —\ —\ O^6$		
Total . . .	$C^{10}\ N^4\ H^8\ O^{16}$	Total . . .	$C^{10}\ N^4\ H^8\ O^{16}$

Water, considered as a dietetical remedy, may be regarded under a two-fold point of view; first, with respect to its *quantity;* secondly, in reference to its *quality.*

In febrile and inflammatory diseases an almost unlimited use of aqueous fluids is admitted under the various names of *slops, diluents,* &c. &c. They quench thirst, lessen the stimulating quality, and augment the fluidity of the blood—in some maladies, however, it is necessary to restrict the quantity of the fluids taken; it becomes necessary, in fact, to adopt *a dry diet,* as when we desire to keep down the quantity of the circulating fluid (as in valvular disease of the heart,) or to prevent thinness of the blood (as in aneurysm of any of the great vessels, where our only hope of cure depends on the coagulation and deposition of fibrine within the aneurysmal sac,) or when we wish to repress excessive secretion (as of urine, in diabetes,)

With respect to *quality*, the waters furnished us by nature may be divided into three classes: viz. 1st. Common waters, or those employed as drinks, or for dressing food, or other purposes of domestic economy. 2nd. Sea water. 3d. Mineral waters. Distilled water is usually obtained from the first of these.

1. *Common waters.*—Under this head are included the waters commonly known as *rain*, *spring*, *river*, *well* or *pump*, *lake* and *marsh waters*.

a. Rain water.—Of this we need say nothing.

b. Spring water.—This is rain water, which, having percolated through the earth, re-appears at the surface of some declivity. During its passage it almost always takes up some soluble matters, which of course vary according to the nature of the soil.

c. River water.—This is a mixture of rain and spring water. When deprived of the matters which it frequently holds in suspension, its purity is usually considerable. The carbonate of lime, one of the ordinary solid constituents of river water, is held in solution by carbonic acid, forming bicarbonate of lime. By boiling, this acid is expelled, and the carbonate of lime is precipitated on the sides of the vessel, constituting the *fur* of the tea-kettle, and the *crust* of boilers.

Decomposing organic matter, in suspension or solution, is found in every river water in a greater or less proportion. Ordinarily the quantity is insufficient to act injuriously; but it cannot be doubted that water strongly impregnated with it must be deleterious. In those cases in which its operation has been unequivocally recognised, it has manifested itself by the production of dysentery. Its influence in a milder form is attended with slight relaxation of the bowels. This decomposing organic matter consists principally of the exuviæ of animal and vegetable substances.

d. Well water.—This is water obtained by sinking wells. As it is commonly raised by sinking pumps, it is frequently called *pump water*. The constituents of ordinary well-water are similar to those of river-water above mentioned; but the earthy salts (especially the bicarbonate and sulphate of lime) are found in much greater quantity. It usually decomposes and curdles soap, for which reason it is called *hard-water*, to distinguish it from river and other waters, which are readily miscible with soap, and which are termed *soft water*. The hardness of water depends on certain earthy salts, the most common of which is sulphate of lime. By the mutual action of this salt and soap, double decomposition is effected: the sulphuric acid unites with the alkali of the soap, setting free the fatty acids, which unite with the lime to form an insoluble earthy soap. Hard water is a less perfect solvent of organic matter than soft water; hence in the preparation of infusions and decoctions, and for many domestic purposes, as tea-making and brewing, it is inferior to soft water; and for the same reason, it is improper as a drink in dyspeptic affections. It proves injurious also in urinary deposits.

Though the purest waters are the most wholesome, yet very pure water is possessed of one very dangerous quality: viz. that of rapidly corroding lead, and thereby acquiring an impregnation of this metal. Distilled water has no action on lead, provided the air be excluded, but when this

is admitted, a thin white crust of carbonate and hydrate of the oxide of lead is speedily formed. Now, it is very remarkable that the neutral salts, usually found in spring water, impair the corrosive action of water and air, and thus exercise a protecting influence. To the presence of saline matter, therefore, is to be ascribed the comparative infrequency of the plumbeous impregnation of water kept in leaden cisterns or transmitted through leaden pipes. All salts do not possess an equally protective influence, the carbonates and sulphates being most, the chlorides (muriates) the least, energetic of those saline substances commonly met with in spring waters. Rain and other pure kinds of water which contain but minute portions of these protecting salts, readily acquire an impregnation of lead from roofs, gutters, cisterns, or pipes, made of this metal. Galvanic action is another cause of lead being acted on by water. Water impregnated with lead, in the way above alluded to, possesses the following properties:—By exposure to the air it becomes covered with a thin white film, and the vessel in which it is contained becomes lined with a thin white incrustation of a pearly lustre. This crust, dissolved in acetic acid, yields a solution which is rendered blackish brown by a sulphuretted hydrogen, and yellow by either iodide of potassium, or bichromate of potash.

The following conclusions, drawn by Dr. Christison, as to the employment of lead pipes for conducting water, are of considerable importance, and therefore deserve especial attention.

"1. Lead pipes ought not to be used for the purpose, at least where the distance is considerable, without a careful examination of the water to be transmitted.

"2. The risk of a dangerous impregnation with lead is greatest in the instance of the purest waters.

"3. Water, which tarnishes polished lead when left at rest upon it in a glass vessel for a few hours, cannot be safely transmitted through lead-pipes without certain precautions.

"4. Water which contains less than about an 8000th of salts in solution, cannot be safely conducted in lead-pipes without certain precautions.

"5. Even this proportion will prove insufficient to prevent corrosion, unless a considerable part of the saline matters consist of carbonates and sulphates, especially the former.

"6. So large a proportion as a 4000th, probably even a considerably larger proportion, will be insufficient, if the salts in solution be in a great measure muriates.

"7. It is I conceive right to add, that in all cases, even though the composition of the water seems to bring it within the conditions of safety now stated, an attentive examination should be made of the water after it has been running for a few days through the pipes. For it is not improbable that other circumstances, besides those hitherto ascertained, may regulate the preventive influence of neutral salts.

"8. When the water is judged to be of a kind which is likely to attack lead-pipes, or when it actually flows through them impregnated with lead, a remedy may be found, either in leaving the pipes full of the water and at rest for three or four months, or by substituting for the water a weak solution of phosphate of soda, in the proportion of about a 25,000th part."

e. Lake-water.—This is a collection of rain, spring, and river-water, usually contaminated with putrefying organic matter.

f. Marsh-water.—This is similar to lake-water, except that it is altogether stagnant, and is more loaded with putrescent matter. The sulphates in

sea and other waters are decomposed by putrefying vegetable matter, with the evolution of sulphuretted hydrogen; hence the intolerable stench from marshy and swampy grounds liable to occasional inundations from the sea.

The ordinary modes of purifying common water are *filtration*, *ebullition*, *distillation*, and by the addition of *chemical agents*. We shall now pass on to the other alimentary principles, and, passing over the *mucilaginous*, the *saccharine*, the *amylaceous*, the *ligneous*, and the *pectinaceous principles*, as presenting but little that is new, we come to the *acidulous alimentary principle*. This principle has been admitted by the author for two reasons: the *first* is, that vegetable acid constitutes one of the ingredients of our foods. Fruits and succulent herbs, in both of which vegetable acid exists, have always been employed as food. Acetic acid, obtained by the acetous fermentation of wine, was in very early use. "Vinegar, either by accident or design, (says Dr. Prout,) has been employed by mankind in all ages, in greater or less quantity, as an aliment; or it has been formed artificially from certain bodies, with the view to alimentary purposes."

The *second* reason is, that the employment of vegetable acid as an aliment, is necessary for the preservation of health. At least it becomes pretty clearly established that the "complete and prolonged abstinence from succulent vegetables or fruits, or their preserved juices, as articles of food," is a cause of scurvy; and various circumstances render it probable that the antiscorbutic virtue of succulent vegetables or fruits depends on the organic acids, or on some salt that enters the system only in combination with such acids. The latter supposition is the more probable, because the acids, pure, have much less efficacy in preventing scurvy than the vegetable juices from which they are derived. Lemon-juice evaporated to the consistence of a syrup, as originally recommended by Dr. Lind, was found very inferior to the fresh fruit; and the crystallised acid, after being extensively tried, was renounced in favour of the juice preserved simply by the addition of a certain proportion of spirit." All vegetable acids, however, which can be taken as food, are not equally efficacious; for though it may be admitted that lemon-juice is a valuable antiscorbutic, the same cannot be said of vinegar; the united observations of Drs. Lind, Gilbert Blane, and Trotter, having shown that the liberal use of vinegar by sailors did not prevent the appearance, nor check the progress, of scurvy. The author now proceeds to the organic acids in most frequent use: commencing with—

1st, *Acetic Acid*, or the *Acid of Vinegar*. Anhydrous, or real acetic acid, as it exists in some acetates, has the following composition, $C_4H\ O_3$. *Glacial or Crystallisable Acetic Acid*, the strongest procurable, contains one equivalent of water. Its formula is $C_4H_3O_3 + Aqua$.

Pyroligneous acid, called also *Wood-vinegar*, or *White-vinegar*, is obtained by the distillation of wood. When pure, it consists of acetic acid and water only.

The *common vinegar* of the shops is procured by subjecting an infusion of malt, or of a mixture of milk and raw barley, to the acetous fermentation. Hence it is commonly termed *Malt-vinegar*.

Wine-vinegar or *French-vinegar*, is obtained from wines of inferior

quality. It is of two kinds, *white* and *red*. *White* wine vinegar is usually preferred, as keeping better. The constituents of wine vinegar are very similar to those of malt vinegar. It contains a little bitartrate and sulphate of potash. Wine vinegar may be distinguished from malt vinegar by ammonia, which occasions in the former a purplish precipitate, but not in the latter.

Distilled vinegar is usually superseded in the shops by dilute pyroligneous acid; but this imitation has not so fragrant an odour as the genuine article.

Vinegar is used at the table as a condiment, on account of its agreeable flavour and refreshing odour. Taken in small quantities, it is quite wholesome, allaying thirst and checking præternatural heat. The habitual use of it is injurious, and, by disturbing the function of the stomach, may give rise to leanness. It is in repute with young ladies for diminishing obesity. But the following case, from Portal, quoted by Giacomini, shews the ill-consequences of employing it for this purpose :—

"A few years ago a young lady, in easy circumstances, enjoyed good health; she was very plump, had a good appetite, and a complexion blooming with roses and lilies. She began to look on her plumpness with suspicion; for her mother was very fat, and she was afraid of becoming like her. Accordingly she consulted a woman, who advised her to drink a small glass of vinegar daily; the young lady followed her advice, and her plumpness diminished. She was delighted with the success of the remedy, and continued it for more than a month. She began to have a cough; but it was dry at its commencement, and was considered as a slight cold, which would go off. Meantime, from dry it became moist; a slow fever came on, and a difficulty of breathing; her body became lean, and wasted away; night sweats, swelling of the feet and of the legs, succeeded, and a diarrhœa terminated her life. On examination all the lobes of the lungs were found filled with tubercles, and somewhat resembling a bunch of grapes."

We shall now pass on to the *Proteinaceous Alimentary Principle*. Several organic substances, both animal and vegetable, which are employed as aliments, contain as their basis, or at least yield, the substance called by Mulder *Proteine*. They may therefore be regarded as modifications of one another, or of *proteine*. The author has accordingly grouped them under the head of the proteinaceous alimentary principle. This group corresponds very nearly with that called by Dr. Prout the *Albuminous Alimentary Principle*. It differs, however, in not comprehending gelatinous substances, which the author deemed it advisable to form into a distinct group. The following is the analysis of proteine, as given by its discoverer Mulder.

	From Fibrine.	From Ovalbumen.	From Vegetable Albumen.
Carbon . .	55·44	55·30	54·99
Hydrogen .	6·95	6·94	6·87
Nitrogen .	16·05	16·02	15·66
Oxygen . .	21·56	21·74	22·48
Proteine .	100·00	100·00	100·00

Liebig has deduced the following formula for the representation of the composition of proteine :—

	Atoms.	Eq. Wt.	Per Cent.
Carbon	48	288	55·38
Hydrogen	36	36	6·92
Nitrogen	6	84	16·16
Oxygen	14	112	21·54
Proteine	1	520	100·00

Proteine does not exist, as such, in organised beings. Combined with small quantities of mineral or organised substances (sulphur, phosphorus, potash, soda, common salt, and phosphate of lime,) it constitutes fibrine, albumen, and caseine, both animal and vegetable.

Fibrine, albumen, and caseine, contain, besides proteine, sulphur, and phosphorus, a quantity of *saline matter*, and hence, when burned, they leave ashes (composed principally of phosphate of lime and alkaline salts). The dietetical properties of pure proteine have not yet been ascertained. The proteinaceous compounds constitute the plastic elements of nutrition.

According to Liebig, they are produced by vegetables only, and cannot be formed by animals, "although the animal organism possesses the power of converting one modification of proteine into another, fibrine into albumen, or *vice versâ*, or both into caseine, &c. In this point of view, the vegetable forms of proteine, vegetable albumen, fibrine, and caseine, become signally important, as the only sources of proteine for animal life, and consequently of nutrition, strictly so called—that is, the growth in mass of the animal body."*

Proteinaceous aliments are obtained from both animals and vegetables, and it will therefore be convenient to consider them under two distinct groups, though Liebig states, that animal and vegetable fibrine, animal and vegetable albumen, and animal and vegetable caseine, are respectively identical in every particular.

1. *Animal Proteinaceous Principles.*—This sub-group comprehends Fibrine, Albumen, and Caseine.

a. Fibrine; Animal Fibrine.—The fibrine is contained in solution in the circulating blood, but coagulates when this fluid is drawn from the body, forming with the colouring particles the *clot* or *crassamentum*. In the solid state it constitutes the basis of muscular fibre. It forms, therefore, the principal constituent of the fleshy or lean parts of animals. It is also found in some other animal tissues.

Quantity of Fibrine in Animal Substances.

100 *Parts.*	*Fibrine.*	*Authority.*
Blood of the Hog	0·46	Andral, Gavarret, and Delafond.
„ „ Ox	0·37	
„ „ Sheep	0·3	
Beef (muscle of)	20·0 *including albumen.*	Brande.
Veal (ditto)	19·0	Ditto.
Mutton (do.)	22	Ditto.
Pork (do.)	19	Ditto.
Chicken (do.)	20	Ditto.
Cod (do.)	14	Ditto.

* Turner's Chemistry, 7th edition.

100 *Parts.*	*Fibrine.*	*Authority.*
Haddock (do.)	13	Brande.
Sole (do.)	15	
Calf's Sweetbread (Thymus)	8	Morin.

Fibrine (as beef-steak, &c.) is readily soluble in an artificial digestive liquid.* It is also speedily dissolved in the living stomach, and is generally considered, even by dyspeptics, as being easy of digestion. It is an important element of nutrition, and yields fibrine, albumen, and caseine, as well as the tissues composed of those substances. Alone, however, it is incapable of supporting life, except for a very limited period. Magendie mentions, as a most singular circumstance, that animals who took regularly for two months from 500 grammes (1 lb. 4oz. 37 grains troy,) to double that quantity of fibrine daily, died of inanition; and, on a post-mortem examination, it was found that the blood had almost entirely disappeared. "Nothwithstanding," says Magendie, "the care we took to collect it (the blood) a few minutes after death, scarcely 15 grains troy of fibrine could be obtained."

b. Albumen; Animal Albumen.—This substance constitutes the most important part of animal foods. The albumen, both of the egg (*ovalbumen,*) and of the serum of the blood (*seralbumen,*) is liquid. But the albumen of flesh, glands, and viscera of animals, is solid.

Albumen is highly nutritious, and when either raw or lightly boiled, is easy of digestion; but when boiled hard, or especially when fried, its digestibility is considerably impaired. Albumen, says Liebig, must be considered as the true starting point of all the animal tissues. Still, animals cannot subsist solely on albumen. After a few days use of it they refuse to take it, preferring to suffer the most violent pangs of hunger rather than eat it, and ultimately they die of inanition.

c. Animal Caseine; Caseum; Lactalbumen; Curd.—This is the coagulable matter of milk, and is closely allied to albumen, of which it may be regarded as a modification.

The quantity of caseine contained in different kinds of milk varies considerably. Caseine, like albumen and fibrine, is a proteinaceous substance, differing from the two latter in containing no phosphorus. Coagulated caseine, deprived of whey by pressure, and usually mixed with more or less of butter, constitutes *cheese;* the richness of which is in proportion to the quantity of butter present. Rich cheese, when toasted, undergoes a kind of semifusion, and becomes soft and viscid. *Stilton cheese* is prepared from milk to which cream is added. *Cheshire* and the best *Gloucester cheeses* are made from unskimmed milk. *Suffolk* and *Parmesan cheeses* are prepared from skim-milk. Annotta is often employed, as a colouring agent, in the preparation of cheese. Salt is used to preserve it as well as to improve the flavour and add to the weight.

Cheese is subject to the attacks of both animals and vegetables. The Fly called *Musca* (*Tephritis*) *putris* deposits its leaping larvæ or maggots (called *hoppers* or *jumpers*) on cheese. The *cheese-mite* (*Acarus domesticus*

* Prepared by macerating the lining membrane of the 4th stomach of the calf in water, to which a few drops of hydrochloric acid are to be added.

is another animal of frequent occurrence. The *Mould* of cheese is composed of minute fungi. *Blue Mould* is the *Aspergillus glaucus* of Berkeley; while *Red Cheese-mould* is the *Sporendonema Casei* of the same authority; Caseine is highly nutritious, constituting a plastic element of nutrition, by which, in the young mammal, the development of the tissues is effected.

"The young animal," says Liebig, "receives in the form of caseine the chief constituent of the mother's blood. To convert caseine into blood no foreign substance is required, and in the conversion of the mother's blood into caseine, no elements of the constituents of the blood have been separated. When chemically examined, caseine is found to contain a much larger proportion of the earth of bones than blood does, and that in a very soluble form, capable of reaching every part of the body. Thus, even in the earliest period of its life, the development of the organs, in which vitality resides, is, in the carnivorous animal, dependent on the supply of a substance, identical in organic composition with the chief constituents of its blood."

2. *Vegetable Proteinaceous Substances.*—According to Liebig, vegetables contain proximate principles, which are not only similar to, but absolutely identical with, the fibrine, albumen, and caseine, of animals; and he, therefore, denominates them respectively, vegetable fibrine, vegetable albumen, and vegetable caseine. There is also a fourth proteinaceous vegetable principle called glutine, or pure gluten.

a. Vegetable Fibrine.—This principle is most abundant in the seeds of the cereal grasses, as wheat, rye, barley, oats, maize and rice. It exists, also, in buckwheat, and in the juice of grapes. It is also found in the newly-expressed juices of most vegetables, as of carrots, turnips, &c. It differs from vegetable albumen, and vegetable caseine, in being insoluble in water.

b. Vegetable Albumen.—This, like vegetable fibrine, is a constituent of the seeds of the cereal grasses, as of wheat. In the preparation of raw gluten from wheaten dough, it is washed away along with the starch. It is found in great abundance in the oily seeds, as almonds, &c.

Most vegetable juices contain a considerable quantity of it. This principle differs from the vegetable fibrine in being soluble in water, and from vegetable caseine in coagulating when heated.

c. Vegetable Caseine.—This is chiefly found in leguminous seeds, as beans, peas, lentils; and has, in consequence, been termed *Legumine.* The oily seeds, such as almonds, also contain it along with albumen. It differs from vegetable fibrine in being soluble in water; and from vegetable albumen in not coagulating when its aqueous solution is heated.

d. Pure Gluten.—By washing wheaten dough with a stream of water, the gum, sugar, starch, and vegetable albumen are removed; while a ductile, tenacious, elastic, gray mass is left, usually called *gluten.*

Gluten is easy of digestion, is highly nutritious, and alone it is capable of the prolonged nutrition of animals.

The Gelatinous Alimentary Principle.

Dr. Prout comprehends gelatine among albuminous aliments. He con-

siders it to be a modification of albumen, or as the least perfect kind of albuminous matter existing in animal bodies.

But, according to our author, gelatine and albumen, and the proteinaceous and albuminous tissues respectively differ in their chemical properties and composition. Though it is probable that in the animal systems gelatinous tissues are formed out of proteine compounds, chemists have hitherto totally failed to convert albumen into gelatine, or *vice versâ*. Again, as the composition of proteine compounds is identical with the flesh and blood of animals, while that of the gelatinous tissues is not, it follows that the nutritive qualities of the proteinaceous and gelatinous tissues cannot be identical. Hence the propriety of separating gelatinous from albuminous aliments.

Albuminous or proteinaceous tissues are insoluble in water, and by boiling become hard. Gelatinous tissues, on the other hand, yield, by boiling, a substance called *gelatine*, which is soluble, and forms with water a tremulous mass, termed *jelly* (*animal jelly*).

The digestibility of the different varieties and forms of gelatinous matter is not uniform. *Calf's-foot jelly*, when fresh prepared, is found to be readily digested even by invalids and dyspeptics. *Isinglass jelly*, when fresh prepared from isinglass of good quality, and also *Hartshorn jelly*, are probably equally easy of digestion. Other forms, however, of gelatinous matter, are more difficult of digestion. Thus *very hard gelatinous tissues*, as *tendons*, require a larger quantity of gastric juice, and a longer time for their complete digestion. *Gelatinous liquids*, when very weak, or which are obtained by means of a high temperature, or which are obtained from tissues containing fat or other matters apt to become rancid, readily disturb the functions of the stomach or intestines. *Soups*, *hashes*, and *stews*, all of which contain gelatine, are obnoxious to the digestive organs of dyspeptics and invalids, principally from the presence of fatty and other substances difficult of digestion.

The times required for the digestion of various substances, as ascertained by Dr. Beaumont, are as follows;—

Articles of Diet.	Mean Time of Chymification.					
	In Stomach.			In Phials.		
	Preparation.	H.	M.	Preparation.	H.	M.
Calf's-foot jelly . .	Boiled . .	1	0			
Isinglass jelly . . .	Boiled . .	1	0			
Gelatine . . .	Boiled . .	2	30	Boiled . .	4	45
Aponeurosis . . .	Boiled . .	3	0	Boiled . .	6	30
Cartilage . . .	Boiled . .	4	15	——		—
Cartilage . . .	—		—	Divided . .	12	0
Tendon . . .	Boiled . .	5	30	Masticated	12	45
Tendon of young beef	—		—	Entire piece	24	0
Bones, beef, solid .	—		—	Entire piece	30	0
" hogs, solid .	—		—	Entire piece	30	0

A gelatinous substance, though possessing some degree of nutritive power, cannot alone sustain animal life; but when taken in conjunction with other alimentary substances, takes part in the nutrition of the body. Different gelatinous substances, however, are unequally nutritive. Thus gelatine is less nutritive than the bone which yields it. It has been found that dogs fed solely on raw bones and water for three months, continued in perfect health, and lost none of their weight by the use of this kind of food. Now, as by boiling in water, the cartilaginous tissue of bone is resolved into gelatine principally, it follows that a gelatinous tissue, (that is, a tissue which by boiling is resolved into gelatine,) contributes to the nutrition of the body; though it cannot be said to be the exclusive agent in this process, since bones contain other alimentary principles (such as fatty and albuminous matters) besides the earthy salts and the substance which is resolvable into gelatine.

An exclusive diet of beef tendon and water is incapable of effecting perfect nutrition,—this has been proved by experiment.

Gelatine extracted from bones, was refused by dogs,—by some from the first, by others after once or twice using it. They preferred enduring the pangs of hunger to eating it. Seasoned gelatine, prepared for the use of man, was eaten for a few days, and then refused; the animals dying of starvation on the twentieth day. Hence it follows, that animals cannot be nourished on gelatine exclusively. We are not justified, however, in saying, that gelatine, conjoined with other elementary substances, does not assist in nutrition. Liebig has suggested, that the nourishing powers of gelatine are confined to the gelatinous tissues; for as proteine cannot be obtained from gelatine, the latter can serve neither for the formation of blood, nor for the reproduction and growth of albuminous and fibrinous tissues. It is therefore probable, he thinks, that gelatine when taken in the dissolved state, is again converted in the body into cellular tissue, membrane and cartilage. And when the powers of nutrition in the whole body are affected by a change of the health, then, even should the power of forming blood remain the same, the organic force by which the constituents of the blood are transformed into cellular tissue and membranes, must necessarily be enfeebled by sickness. In the sick man, the intensity of the vital force, its powers to produce metamorphoses, must be diminished, as well in the stomach as in all other parts of the body. In this condition, the uniform experience of practical physicians shows that gelatinous matters, in a dissolved state, exercise a most decided influence on the state of the health. Given in a form adapted for assimilation, they serve to husband the vital force, just as may be done, in the case of the stomach, by due preparation of the food in general. Such are the ingenious views of Liebig, with which our author, by the way, does not seem fully to coincide.

We find our analysis of this interesting work, has transgressed the bounds originally designed by us. With respect to its merits, we find ourselves called on to state, that we consider it a careful compilation of the opinions of the best writers on the various subjects of which it treats. The ingenious and philosophical views of Liebig have been brought into ample requisition. We fear, however, that the book will never become a popular work. The symbolical language in which the most interesting

parts of it are presented, is totally unintelligible not only to the general reader, but we fear, also, to many, very many, of our professional brethren.

THE TRANSACTIONS OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION. Vol. XI. Churchill, 1843.

THIS volume will keep up the reputation acquired by its predecessors. Its contents are—1. The Retrospective Address, delivered at the Tenth Anniversary Meeting of the Provincial Medical and Surgical Association, held at Exeter, August 3rd and 4th, 1842. By James Black, M.D. II. On the Medical Topography of Sidmouth being a Sketch of the Medico-Topography, Geology, Natural Productions, and Statistics of that District. By J. D. Jeffery, Esq.—III. Experimental and Practical Researches on the Structure and Function of Blood Corpuscles; on Inflammation; and on the Origin and Nature of Tubercles in the Lungs. By William Addison. F.L.S.—IV. Some Cases showing the Advantage of Powerful Counter-irritation, especially the Long Issue on the Calvarium. By George Wallis, M.D.—V. On the Employment of Extension in the Treatment of Fractures of the Spine; with a case. By William Henchman Crowfoot, Esq.—VI. A Case of Paralysis of the Serratus Magnus, which caused the Lower Angles of the Right and Left Scapulæ to become disengaged from the Latissimus Dorsi, &c. By John M. Banner, Esq.—VII. Remarks on Matico, a Styptic much used in South America, for the Suppression of Hæmorrhage. By Thomas Jeffreys, M.D.—VIII. Anatomico-Chirurgical Observations on Dislocations of the Astragalus. By Thomas Turner, Esq.

I. The *Retrospective Address* by Dr. Black is able and complete. Its nature procludes any notice, at present, from us.

II. MEDICAL TOPOGRAPHY OF SIDMOUTH. By *J. D. Jeffery*, Esq.

From very extended observations on the climate of Sidmouth, Mr. Jeffery arrives at the following conclusions with regard to its applicability to different affections and diseases.

"In all cases where disease or disorder is accompanied with *relaxed* habit of body, with softness of muscular fibre and paleness of skin; inc hronic affections of the liver, in chlorosis anæmia, *atonic* dyspepsia, in uterine disorders, arising from debility—to these this coast cannot be said to be adapted in the summer months; in the autumn and winter they may be benefitted. This observation does not apply to convalescents from any protracted acute disease, such as fever, or from accidents, who, coming from inland, will be very likely to recruit their health in the summer; neither does it apply to weakly children, for whom sea bathing may be considered desirable. I have known persons suffering from

chronic irritation and catarrh of the bladder, derive comfort in this summer climate; and also those who labour under acute inflammatory dyspepsia. Those who are subject to different and *peculiar* nervous affections, and are very sensitive to cold, live comparatively comfortable here all the year round. Asthma, that form so called spasmodic, congestion of the lungs, hæmoptysis, and cases wherein there is great irritability of the pulmonary mucous membrane, will be likely to receive benefit at *all seasons* in the soft moist air of the south coast. For young and delicate persons, in whom a tendency to pulmonary disease is suspected, a residence here is desirable. Some forms of inflammatory rheumatism are benefitted. In some peculiar affections of the brain, also attended with *excitement*, this climate proves soothing; but those of a *melancholic* temperament should not be brought here, except in the autumn and winter.

"With regard to pulmonary affections, there is much discrimination to be observed. I have previously mentioned the precautions and considerations which, in my opinion, should be the necessary accompaniments to a change of air, when prescribed for the consumptive invalid. In tuberculous cachexy, and in suspected tuberculous deposit, when the circulation is quick and the lungs sensitive to cold, a *permanent* residence on this coast, subject to the necessary and paramount auxiliaries, such as a proper choice of situation, aspect, &c., and the possession of general, mental, and bodily comforts, with judicious care, might be of essential service. Where softening of tubercle in the lung has taken place, and the patient is in the last stage of consumption, I think I have seen both comfort and life prolonged by the patient's residing *close* to the sea, even in the heat of summer, through the effects of the refreshing qualities of the sea breezes. In winter the patient should reside in one of the numerous cottages inland." 195.

III. The Researches on the Blood Corpuscles, &c., by Mr. Addison are highly interesting. We shall advert to them on another occasion, and leave them, therefore, for the present.

IV. ON THE EMPLOYMENT OF EXTENSION IN THE TREATMENT OF FRACTURES OF THE SPINE. By *Wm. Henchman Crowfoot*, Esq.

The narrative of a case of injury of the spine. A coachman was struck on the back of the neck, and bent double; the spinous processes of the ninth and tenth vertebræ were divided from each other considerably beyond their usual distance, the body of the ninth vertebra having been forced forward, whilst that of the tenth projected backwards. There was total loss of voluntary motion and sensation in the lower extremities.

By means of gradual extension, the deformity of the spine was diminished, and sensibility, but not motion, almost immediately restored. The patient was then placed on his back on a firm bed, and kept quiet; at the end of two months he was able to support himself on his leg, and by the end of the year, was able again to mount the box.

V. A CASE OF PARALYSIS OF THE SERRATUS MAGNUS, WHICH CAUSED THE LOWER ANGLES OF THE RIGHT AND LEFT SCAPULÆ TO BECOME DISENGAGED FROM THE LATISSIMUS DORSI. By *John M. Banner*, Esq.

The *gist* of the paper is so well expressed by its title that it is quite unnecessary for us to add anything.

VI. REMARKS ON MATICO, A STYPTIC MUCH USED IN SOUTH AMERICA, FOR SUPPRESSION OF HÆMORRHAGE. By *Thomas Jeffreys*, M.D.

Two kinds of *Matico* are imported, one collected when *green*, the other when ripe and of a more *yellow* appearance; the latter is stated to be the more powerful styptic. It may be employed internally or externally. *Externally*, the under side of the leaf is preferable to the powder, and more powerful than the smooth or upper side. *Internally*, the decoction or infusion (half an ounce or an ounce to the pint), may be given in doses of three tablespoonfuls.

VII. ANATOMICO-CHIRURGICAL OBSERVATIONS ON DISLOCATIONS OF THE ASTRAGALUS. By *Thomas Turner*, Esq.

This bone may be displaced—*forwards, forwards and inwards, forwards and outwards, upwards and outwards, outwards, inwards, backwards*, and *outwards, downwards and backwards.*

The dislocation may be partial or complete, simple or compound.

The signs of these accidents of course vary, but in all *complete* dislocations, simple or compound, direct or indirect, the foot will be approximated to the leg by the action of muscles; the tibia will occupy a part of the hollow which has been vacated by the astragalus, and the leg will accordingly be shortened one inch or more, corresponding to the depth of the bone that has been dislodged from the ancle joint.

In partial, as well as in complete luxations, the astragalus may be normal in position, or it may undergo a change of axis with respect to its articular surfaces. And this is a matter of some consequence, as in the most promising cases, the latter of these states of the bone would offer an almost insuperable bar to reduction. In partial dislocation, where the bones of the leg are fractured, and the ligaments torn, so as to give increased space, and more power and command over the parts, inversion or eversion, or even the turning over upon itself of the astragalus, might not be an insuperable obstacle; but in complete dislocation, whether simple or compound, or complicated, with fracture or not, and especially in the second case, reduction is, the author thinks, almost impracticable.

In dislocations *forwards*, the astragalus may be partially or wholly pushed from between the tibia and fibula and calcaneum, without lacerating the skin; but almost invariably, the pressure of the bone will cause, sooner or later, the skin to give way, and the bone to protrude.

Dislocations *inwards* and *outwards* are generally simple, the subcutaneous textures being strong enough to prevent the bone from being driven through them. In dislocations *inwards*, however, the bone has always sloughed out ultimately, whilst in dislocation *outwards*, the bone has remained in its new situation, without making its way to the surface.

Dislocation *backwards* is always simple and always remains so; and this is readily understood when we recollect the nature of the soft structures which occupy the space between the joint and the tendo-achillis. This dislocation is very rare.

Mr. Turner details 45 cases of this accident; of these there are,

Simple cases—24.

Partial .. 3	Without fracture	2
	With fracture	1
Complete .. 21	Without fracture	13
	With fracture	8

Compound cases—21.

Partial .. 2	Without fracture	2
	With fracture	0
Complete .. 19	Without fracture	13
	With fracture	5
	With dislocation of ancle ..	1

Thus, there is no great disparity in numbers between the simple and compound cases.

With regard to the direction of the dislocation:—11 were *forwards*: 4 *forwards and inwards*; 10 *forwards and outwards*; 1 *upwards and outwards*; 6 *inwards*; 6 *outwards*; 6 *backwards*; 1 *outwards, downwards and backwards*.

Principles of the Treatment in Dislocations of the Astragalus.

1. *Reduction.*—If the astragalus be only partially dislocated, and not twisted round, reduction may frequently be accomplished, because the main obstacle to success, namely the forcible approximation of the tibia to the os calcis, is prevented by the part of the astragalus which remains between these bones. If there is a fracture of the leg, fracture of the os calcis, or dissevering of the bones of the tarsus with or without fracture, reduction is practicable. Supposing, however, the astragalus to be completely luxated, without fracture, disjointed tarsal bones or dislocation of the ancle, then, Mr. Turner is of opinion, that reduction is hopeless, and that all attempts at accomplishing it are worse than useless; that to the violence used, we may attribute much of the mischief which arises from diffuse cellular inflammation, from immediate gangrene induced in the parts by the direct pressure which has been applied, and other destructive consequences which increase considerably the danger of the accident.

The main obstacle to reduction consists in the rigid and unyielding approximation of the leg to the foot by the powerful action, not merely of the gastrocnemii, but of all the muscles which pass from the leg to the foot behind the malleoli: by flexing the leg upon the knee we can relax the gastrocnemius, but have no means of overcoming the other muscles, as the foot in this accident is often fixed and cannot be extended so as to enable us to put these muscles in a state of relaxation.

2. *The practice of allowing the Astragalus to remain in its new situation.*—If the astragalus cannot be reduced, the question arises as to what is the proper course to be pursued. In almost all the cases narrated in which the bone was dislocated *backwards*, the cases were left to nature, and did well; a very useful foot being the result. In other cases the following, the author thinks, the safest line of practice.

"In partial cases, whether simple or simple and complicated, should attempts at reduction fail, there must be no operative interference. In partial and com-

pound, or compound and complicated, (reduction failing,) excision, if practicable, of the protruded portion of the bone should be performed. This proceeding gives great facilities to the proper adaptation of the parts; but leaving this out of the question, by neglecting partial excision we incur one of two risks: firstly, the exposed or prominent part of the bone may die, and the patient have to undergo the tedious and trying processes of inflammation, suppuration, and exfoliation, and the death of one part of the bone may endanger the vitality or disease of the remainder, and ultimately involve the ancle joint (as in one of M. Boyer's cases,) and demand, as a last resource, amputation as the means which alone could give to the patient a chance of life; and if the extruded portion of bone should not be excised, and continue to live, its presence would so far restrain the action of the ancle as to produce permanent contraction of the heel, permanent inflexibility, and permanent lameness, as in one of our recorded cases." 467.

3. *Excision of the Astragalus.*—It may be summarily stated, that in simple, direct, and complete luxation, the author advocates the practice of allowing the bone to remain in its new situation, without any operation, until it manifests a tendency to ulcerate the skin, in which case he would make an incision over the bone to relieve tension and pressure; and when the bone becomes loose he would remove it.

"In simple, indirect, and complete luxation, he would anticipate, as a matter of certainty, that the bone would die and require dislodgment; to take off tension and pressure from the angles of the displaced bone, he would at once make an incision over it, but not remove the bone, wishing to benefit by the probability that the exposure of the cavity of the joint may have an injurious effect. In complete compound luxation, whether direct or indirect, or complicated, with fracture or with dislocation of the ancle joint, he would immediately proceed to the removal of the astragalus, from believing that the limb will be put in a better condition for the reparative process of the joint, by the abstraction of the processes of inflammation, suppuration, ulceration, and sloughing (processes necessary to the disengagement of the astragalus by natural efforts); for if these be saved, nature will be able to direct, undividedly, her sanatory operations to the interior or deeper seated parts; whereas if her powers are divided between the extrication of the astragalus from its abnormal situation, and the reparation of the joint, they might be insufficient for the purposes required, and the limb or life fall a sacrifice." 475.

4. *Amputation.*—Contrary to what might be expected, it is well known that very serious injuries may affect the ancle, without the removal of the limb being required. The injuries in connection with the present subject, which require the *immediate* amputation of the limb, are extensive laceration and contusion of soft parts, united with simple, simple and complicated, compound or compound and complicated dislocations. The destruction of the soft parts ought to be extremely severe to render amputation necessary, but much must of course depend, in each individual case, upon the age, habits, &c. of the patient.

Subsequent amputation of the limb may be required at different periods after the accident; traumatic gangrene may manifest itself in the course of a few days, not unfrequently, the author imagines, in consequence of the violence exerted in the attempts at reduction. Or consecutive amputation may be required in case of deficient reparative powers, or from extensive suppuration, sloughing, &c. of the cellular and other tissues.

A very instructive paper.

Pharmacologia; being an extended Inquiry into the Operation of Medicinal Bodies, upon which are founded the Theory and art of prescribing. By *J. A. Paris*, M.D. Edition Ninth. London: Highley, 1843.

[*Concluded from No. LXXVII. p.* 34.]

We are now come to that division of his subject called by our author Local (or special) Stimulants.

This, his second division, comprehends those medicinal agents which have been classed under the head of *Evacuants*.

The propriety of giving the name of stimulants to substances which, by their evacuating properties, lower the system so very much as we know emetics and purgatives do, is certainly more than questionable. The effect of a dose of senna and salts can scarcely be said to be of a stimulating character—however, as the term is here understood conventionally, transeat.

Emetics.—Our author defines emetics to be "substances which excite vomiting, independent of any effect arising from the stimulus of quantity, or from that occasioned by any nauseous taste or flavour."

The act of vomiting was formerly attributed to the sole influence of the stomach. Majendie, however, will have it, that the act of vomiting is attributable, exclusively, to the agency of the brain on the abdominal muscles, considering the stomach to be a mere passive instrument on the occasion. Those even who may not be disposed to admit Majendie's theory in its full extent, are willing to admit that the influence of the nervous system is indispensably necessary for producing vomiting; and accordingly we find that, where the energy of the nervous system is suspended, vomiting will not take place, however forcibly the stomach may be goaded by emetics.

"Vomiting may also be produced by the *primary* operation of certain agents upon the brain, by which its energy is disturbed, as by narcotics, or by the motions of swinging, whirling, or sailing; in such cases, the series of actions necessary for the establishing of vomiting, commences in the brain, and is propagated by nervous sympathy to the stomach."

With respect to the mechanism of vomiting, Dr. Marshall Hall considers that, during the act, the larynx is closed, the diaphragm and its various apertures relaxed, while all the muscles *of expiration* are called into action, and yet actual expiration is prevented by the closure of the larynx; in consequence of this, the spasmodic effort expends all its force upon the stomach, and since the cardiac orifice remains open, from the relaxed state of the diaphragm, vomiting takes place—whatever theory be adopted the necessity of nervous influence remains undisputed.

"When an emetic is taken into the stomach, an interval of twenty minutes, or longer, usually passes without any apparent effect, a fact which certainly favours

the idea of absorption; although it may also be immediately induced by mechanical irritation of the pharynx, stomach, or intestines, which proves that it is effected through the medium of the nerves. An uneasy sensation, which we term nausea is then felt, and this continues to increase, until vomiting begins. Here then we perceive are two distinct stages, each of which is marked by its own proper symptoms: the relative intensity and duration of which will be found to vary according to the nature of the exciting causes; thus some emetics, as sulphate of zinc, act without occasioning much nausea, while others, as *tobacco*, excite it to a degree, which is far greater than is proportioned to their emetic power; this is a fact of great importance in directing us in the selection of an emetic, for we shall find that in some diseases it is a great object to avoid that state of system which invariably accompanies nausea, while in others it affords the best mode of answering an important indication of cure."

During the operation of an ordinary emetic, the following are the symptoms which characterise the two stages; while the nausea only is present, the countenance is pale and shranken, the pulse feeble, quick and irregular, and there is a feeling of cold; but as soon as vomiting commences, the face becomes flushed, the pulse quicker and stronger, although it seldom returns to its natural standard, until some time after the vomiting has ceased. A degree of languor, a disposition to sleep, and a general moisture upon the skin, are the circumstances which occur after the total cessation of the paroxysm.

The advantages to be derived from the employment of an emetic in the treatment of disease may depend either on its *primary* or *secondary* effect, that is either on the mere evacuation of the stomach, or on the changes in remote parts arising from sympathy. In selecting the emetic the practitioner should be directed by the object he wishes to fulfil. If he merely wish to evacuate the stomach, he will avoid nauseating emetics and select one that will act quickly. If, on the contrary, he wish to affect some remote organ through the medium of sympathy, an emetic of an opposite character should be preferred. In some cases the mechanical action of the diaphragm and abdominal muscles is the object aimed at; jaundice, arising from the obstruction of biliary calculi, has frequently been quickly removed by the operation of an emetic.

Among the secondary effects of emetics may be reckoned their abating the force of the circulation from the nausea which they induce; hence their use in the treatment of hæmorrhage—in cases of menorrhagia, ipecacuanha has been found of decided benefit. From the function of absorption being inversely as the force of the circulation, we derive considerable aid in the treatment of anasarca from the use of nauseating emetics. Emetics may also be useful in relieving congestion of the capillaries. When we wish to facilitate the passage of a gall-stone through the ductus communis choledochus, a *nauseating emetic* should be selected from the well known efficacy of nausea in relaxing, while the mechanical concussion tends to drive the obstructing matter forward. When on the contrary we wish to evacuate the stomach and to prevent absorption, we should by all means avoid a nauseating emetic; this should be carefully attended to in cases of poisoning. Diaphoresis is frequently observed to follow vomiting, the vessels of the skin sympathising with the stomach.

It may be inferred *à priori* that vomiting may not be devoid of danger in certain states of the body. From the pressure applied to the descending

aorta and the interrupted circulation through the lungs and from impeded respiration, the blood returns with difficulty from the head during vomiting —in the advanced stages of pregnancy the concussion of an emetic may be mischievous, as also in *hernia* and *prolapsus uteri*—in extreme debility also the violence of an emetic may produce fatal syncope.

Jaundice is frequently induced by long continued retching. This arises from the great irritability of the diaphragm and abdominal muscles occasioned by the violent and repeated efforts to vomit; these muscles are thereby thrown into strong spasmodic contractions, and the liver, with the gall-bladder, will be suddenly caught, and as it were squeezed in a press, whereby the bile is made to regurgitate and is carried into the *venæ cavæ*. Such a jaundice will disappear without the aid of any medicine.

Cathartics.—These are defined to be medicines which quicken or increase the evacuation from the intestines, or which, when given in a certain dose, occasion purging. They are divided into *laxatives* and *purgatives*. The former merely evacuate the contents of the bowels without at all affecting the exhalent vessels of the canal; the latter produce a considerable influx of fluids from these vessels; when the purgative is very violent, it is termed *drastic*.

The effects of a purgative may depend on three different modes of operation, viz.

1. By stimulating the muscular fibres of the intestines, whence their peristaltic motion is augmented, and the contents of the bowels more quickly and completely discharged.

2. By stimulating the exhalent vessels terminating in the inner coat of the intestines, and the mouths of the excretory ducts of the mucous glands; by which an increased flow of serous fluids takes place from the former, and a more copious discharge of mucus from the latter; the effect of which is to render the fæcal matter thinner and more abundant.

3. By stimulating the neighbouring viscera, as the liver and pancreas, so as to produce a more copious flow of their secretions into the intestines.

Different purgatives are well known to possess different powers in relation to their several modes of operation; some medicines, as manna, sulphur, magnesia, urge the bowels to evacuate their contents by an imperceptible action on the muscular fibres, and scarcely any increase of serous discharge; others seem to increase the peristaltic motions by acting as mechanical stimulants on the fibre. Other cathartics stimulate the fibres still more, and the effects are either confined to some part of the canal, or communicated to the whole of the intestines from the duodenum to the extremity of the rectum; aloes is an example of the former, and colocynth of the latter mode of operation. Other cathartics again act on the exhalants and produce serous evacuations, and hence formerly called *hydragogues*; these are generally *saline bodies*. *Mercurial purgatives* chiefly act on the liver and thereby occasion an influx of bile into the intestines. The value of purgatives in very many diseases is very great; in none, however, is it more necessary to stimulate the intestines to evacuate their contents than in fever, where, from the oppressed state of the nervous system, the peristaltic motion of the intestinal tube is considerably impaired and fæcal accumulations are sure to take place. We may remark of

purgatives (and the same remark applies to other classes of medicines), that there is less tolerance of them in health than in the state of disease for which they are indicated. A healthy person will have his bowels opened by touching the tongue with the cork of a croton oil bottle, whereas it will require perhaps two or three drops to purge a person who is feverish. It is well known what large doses of tartar emetic may be tolerated in inflammatory diseases, and how little in health, or in chronic affections; as also what large doses of brandy and opium are required to produce an effect in delirium tremens.

In certain of the neuroses connected with a morbid condition of the alimentary passages, purgatives are essentially serviceable; thus *chorea* and *hysterea* have been very successfully treated in this way—the same may be said of *chlorosis*. Nor are the beneficial results of purgatives confined to the mere feculent evacuations which they may occasion. By the quantity of serous fluid which they abstract from the current of the circulation, they are useful as *antiphlogistics*. Where it is an object to promote absorption, they are of great use; according to the well known law that absorption varies directly as the exhalation. Mercurial purgatives not only evacuate the bowels, but also act on the neighbouring organs, and remove congested states of the liver and ducts.

The principle that different purgatives exert their action on different parts of the tube, and possess distinct powers over the different species of matter to be evacuated, should not be lost sight of by the judicious practitioner. Perhaps there is no class of medicines more abused than the class now under consideration. Where there is great debility of constitution great caution is necessary in prescribing the more active remedies of this class, and also where there is any tendency to gastric or intestinal inflammation. Delicate subjects, whose nervous systems are very weak, find it necessary from the effect of habit to have frequent recourse to purgatives; a free use of tonics, however, and more especially of the preparations of iron, will, by strengthening the nervous system, prove a much better and more certain mode of keeping the bowels open. During pregnancy, and immediately after delivery, and also during menstruation, caution is required in the administration of purgatives.

Emmenagogues.—These are medicines which are capable of producing the menstrual discharge.

That emmenagogues are but relative agents will appear evident if we only recollect the various morbid states on which retention or suppression of the menses may depend.

This affection generally depends on debility of the system; it sometimes however depends on, or at least accompanies, a plethoric habit of body; in the former case tonics are indicated, in the latter, venæsection aided by purgatives, will act the part of an emmenagogue; cupping on the loins has often been found very serviceable. When the affection occurs in young women about the age of puberty, it is generally connected with extreme debility, and the preparations of iron, bark, and other tonics, are the most likely to succeed; but in full, florid habits, where the catamenia are suddenly suppressed, antiphlogistic means, such as gentle purgatives, bloodletting, &c. are the most likely to prove serviceable.

There are two other classes of medicines, which are sometimes found beneficial in treating amenorrhœa, viz. *acrid purgatives* and *stimulating diuretics*; the former act on the rectum and thence by contiguous sympathy on the uterus, as *aloes*, &c.; the latter, as *cantharides*, the *turpentines*, are supposed to excite the womb sympathetically by their stimulus on the bladder—a combination of myrrh, aloes, sulphate of iron and the essential oil of savine has been found very useful. Mercury also has been found of great service.

Diuretics.—In this section, by far the most valuable and practically useful in the entire work, the action and modus operandi of diuretic medicines, or medicines which increase the urinary discharge, is considered. The following classification of these substances is proposed by our author:

CLASS I. MEDICINES WHICH ACT PRIMARILY ON THE URINARY ORGANS.

1. *By stimulating the Secreting Vessels of the Kidneys, by Contact.*

a. The medicines not undergoing decomposition *in transitu.*

1. *Potassa.*
2. *Potassæ Nitras.*
3. *Oleum Terebinthinæ.*
4. *Juniperus Communis.*
5. *Cantharides.*
6. *Potassæ Hydriodas.*

b. The medicines undergoing decomposition *in transitu.*

1. *Potassæ Acetas.*
2. *Potassæ Bitartras.*
3. *Scilla Maritima.*
4. *Colchicum Autumnale.*
5. *Copaifera Langsdorfii.*
6. *Cytisus Scoparius.*

CLASS II. MEDICINES WHICH ACT *primarily* ON THE ABSORBENTS, AND *secondarily* ON THE KIDNEYS.

Mercury.

CLASS III. MEDICINES WHICH ACT *primarily* ON THE STOMACH AND PRIMÆ VIÆ, AND *secondarily* ON THE ABSORBENTS.

1. *By diminishing Arterial Action, and increasing that of Absorption.*

1. *Digitalis.*
2. *Nicotiana Tabacum.*

2. *By increasing the Tone of the Body in general, and that of the Absorbent system in particular.*

Bitter Tonics, &c. &c.

3. *By producing Catharsis, and thereby increasing the Action of the Exhalants* directly, *and that of the Absorbents* indirectly.

1. *Elaterium.*
2. *Jalap, &c.*

It is easy enough to conceive that a substance capable of entering the current of the circulation, and of stimulating the kidneys by actual contact, should occasion a more copious urinary discharge; saline substances seem to be the peculiar stimuli of these organs, as potass, soda, nitre, &c. Water as a simple diluent, will promote the action of the kidneys, and

Cullen remarks that, by withholding the use of fluids in dropsy, you diminish the quantity of fluids secreted. This will be sufficient answer for those who prohibit the use of all drinks in dropsy.

"It is observed that the digestive organs appear to possess the power of readily decomposing all saline compounds into which *vegetable* acids enter as ingredients, and of eliminating their alkaline base, which, being in the course of the circulation carried to the kidneys, excites them into action, and promotes the excretion of urine; and it is probably in this way that the *acetate*, *citrate*, *bitartrate*, and other analogous combinations of *potass* and *soda*, prove diuretic: on the other hand, it is equally evident that salts containing the *mineral* acids are not under the control of the decomposing powers of the *Chylopoietic* organs, and consequently do not undergo any changes *in transitu*, although some of these salts, as I have just stated, especially the more soluble ones, are absorbed entire and prove diuretic. *Sulphate of potass*, from its insolubility, is not readily absorbed, and its composition will not allow the development of its base; we perceive, therefore, that it has not any tendency to produce an influence upon the urinary secretion."

Certain vegetable bodies likewise appear to occasion diuresis by a similar mode of operation, and it is worthy of notice that these medicines generally contain a bitter principle, which is probably separated by the analysing powers of the stomach, as exemplified in the *scilla maritima colchicum autumnale*, *lactuca virosa*, *gratiola officinalis*, *cytisus scoparius* (*cucuminas*,) *juniperus communis*, *&c.* The stimulant powers of a bitter vegetable principle upon the *primæ viæ* we have already noticed under the head of Tonics. Our author makes a remark here well deserving the attention of the practitioner, viz. that the diuretic operation of any body that acts by being absorbed, is at once suspended, if catharsis follows its administration, whether in consequence of the largeness of its dose, its increased solubility, or from the effect of its combination with some purgative, for it is a law, that the processes of assimilation and absorption from the duodenum are arrested, or very imperfectly performed during any alvine excitement; cream of tartar is a good example of this, which, in moderate doses, acts on the kidneys; but if the dose be increased, or if it be reduced to the state of tartrate (*soluble tartar*,) so that catharsis follows its employment, then diuresis will not ensue, since no decomposition can take place under such circumstances, nor can it be carried by absorption into the circulation. Oil of turpentine is another instance of the same law; in the dose of two fluid drachms it will act powerfully on the kidneys, whilst in the dose of a fluid ounce it will scarcely exercise any influence on these organs, from the increased dose acting on the bowels, and consequently preventing its entrance into the circulation.

Another fact is mentioned by our author, illustrative of the same principle, viz. that sulphate of magnesia will not readily produce diuresis, because it acts on the bowels; but if this same saline be given to the horse whose bowels are not readily affected by purgatives, it acts powerfully on the kidneys; from this in-irritability of the bowels of the horse, diuretic medicines are more certain in their operation on that animal than in the case of the human subject; a fact which, in itself, as the author very happily remarks, shows the importance of attending to the bowels, during

a course of those diuretics, which require to be absorbed before they can produce their specific effects.

The state of the cutaneous surface demands attention during the administration of a diuretic; for, if its vessels be excited by external warmth, the action of the diuretic may be diverted from the urinary organs to the exhalants on the surface, and occasion diaphoresis; whilst, if the surface be kept cool, this diversion will not occur; so effectual, in fact, is cooling the surface in determining to the kidneys, that the ordinary diaphoretic medicines may, by an attention to this circumstance, be converted into powerful diuretics, from the close sympathy subsisting between the functions of the skin and kidneys.

The second class of medicines established by our author includes those which act *primarily* on the absorbents, and *secondarily* on the kidneys. We have already seen that, by increasing the action of the kidneys, we also augment that of the absorbents. Here we bring about an operation the very converse of that; the absorbents are stimulated in the first instance, the blood then becomes surcharged with serous fluid, in consequence of which the kidneys are called into brisk action, and this serous fluid is eliminated through the urinary passages. The only substances with which we are acquainted as specific stimulants of the absorbents are mercury and iodine.

Class III., we have already seen, includes those substances which act *primarily* on the stomach or system, and *secondarily* on the urinary organs.

1st. By diminishing arterial action, and increasing that of absorption.

It is an established truth in physiology, that the energy of the vessels circulating the blood and that of the absorbents are antagonist powers. Majendie has proved, that the absorption of a poison is retarded by a plethoric and accelerated by a depleted state of the blood-vessels. Hence, from the close connexion which exists between arterial action and absorption, it is evident that medicines lowering the former, must augment the latter, and increase diuresis. Hence the value of digitalis in the treatment of dropsy; its powers in augmenting diuresis appear only when it is given in dropsy. For the same reason, and on the same principle, we know venesection proves a most effectual diuretic.

2. By increasing the tone of the body in general, and that of the absorbent system in particular.

We frequently observe that fevers which have been protracted are followed by *œdematous* swellings; this we explain by the general debility of the body, in which the absorbents participate; the indication in such cases is to invigorate the system, whereby the enfeebled absorbents are strengthened and stimulated to take up and remove the accumulations of serous fluids. In extreme debility, as well as weakness of the absorbents, it would seem that we have laxity also of the exhalants, which causes these vessels to allow the thinner parts of the blood to pass too readily through them; there are many facts which tend to prove the truth of this mode of viewing the subject; palsied limbs frequently become œdematous; the advantage resulting from the mechanical support of pressure from bandages in such cases is another proof.

3. By producing catharsis, and thereby increasing the action of the exhalants *directly*, and that of the absorbents *indirectly*.

Our author has already noticed under the head of Cathartics that these medicines are capable of causing a very copious discharge of serous fluid; by this the blood is deprived of a large portion of water, and the absorbents are thus indirectly stimulated to supply the deficiency. Elaterium and jalap are the principal substances employed for this purpose—where the vital powers are adequate to sustain the violence of these remedies, especially of the elaterium, they are strikingly effectual in several forms of dropsy. We have now presented a rather full analysis of our author's observations on the employment of Diuretics in the practice of medicine; they are extremely valuable; for they lead the practitioner to select the particular diuretic best calculated to fulfil the indications of each individual case; they will at the same time point out those which are physiologically incompatible. Where dropsy arises from organic disease, its cure cannot be accomplished by the mere evacuation of the fluid, but where it arises from diminished absorption, then it is that diuretics prove most effectual. We now come to those medicines which increase the natural exhalation of the skin, and which have been called *Diaphoretics* or *Sudorifics*, according to the degree of force with which they act; in the one case the effused fluid is carried off by the conducting power of the atmosphere, in the insensible form of vapour, whilst in the other it is effused so copiously from the exhalant vessels as to appear in the liquid form. The following is the arrangement proposed by our author of the medicines of this class—

Diaphoretics produce their effects—

I. By stimulating the Cutaneous Capillaries.

A. By external application.
By stimulus of heat, friction, &c.

B. By medicines which enter the circulation, and stimulate the cutaneous vessels by contact.
Mercurials—Sulphur.

C. By medicines which act on the surface *sympathetically*, through the medium of the stomach.
Cold Drinks, &c.

II. By increasing the General Action of the Vascular System.
Violent Exercise—Ammonia—Guaiacum—Alcohol—Warm Bath.

III. By relaxing the morbidly constricted Mouths of the Perspiratory Vessels.
Antimonials—Cold Affusion—Venæsection—Saline Diaphoretics.

Heat alone is often sufficient to produce diaphoresis, without necessarily increasing that of the heart and arteries; it generally too accelerates the operation of a sudorific medicine; there are occasions however, where the stimulus of heat will be found to impede diaphoresis: as in the hot stage

of continued fever, where there seems to exist a peculiar constriction of the perspiratory vessels, accompanied with heat and dryness; in which case, remedies of the third class should be employed. The *warm bath* seems to partake of *all* the qualities upon which the above classification is founded. During the ardent heat of fever the external application of cold is the most efficient sudorific—cold drinks also are an excellent diaphoretic in the hot stage of fever; this effect they produce through the sympathy subsisting between the stomach and skin. In the same way is explained the diaphoresis occasioned by the use of nauseating doses of antimony, and of other emetics.

Those stimulants which are found to produce sweating do so by merely accelerating the circulation; great care is necessary in the employment of the substances; especially in febrile affections.

Saline diaphoretics are supposed to enter the circulation and thus to act directly on the cutaneous vessels.

In treating pulmonary affections, diaphoretics are found very useful from the sympathetic connexion subsisting between the functions of the lungs and skin. In bowel complaints also they are employed with advantage for a somewhat similar reason. We know that sudden suppression of perspiration by cold is frequently followed by *diarrhœa, enteritis*, &c. These medicines are often employed in *some skin diseases*, as *herpes, lepra, &c.* In the various forms of *dropsy*, especially anasarca, diaphoretics are useful.

It is known that by the cutaneous transpiration a portion of excrementitious matter is removed from the system; if therefore this function be but imperfectly performed, a deleterious fluid is retained which may occasion disease: such a course our author suspects may have some share in the generation of calculi, and other diseases of the urinary organs.

The next class of medicines which presents itself includes EXPECTORANTS, or substances supposed capable of facilitating the excretion of mucus from the breast, viz. from the trachea, and cells and passages of the lungs. The author however repudiates the idea that there are any substances which can effect this by any *specific action* on the parts concerned.

In order to explain their *modus operandi* he proposes the following classification of them, founded on their supposed modes of operation:—

CLASS I.—MEDICINES WHICH INCREASE PULMONARY EXHALATION, AND THEREBY DILUTE THE MUCUS IN THE FOLLICLES OF THE LUNGS.

a. By removing constriction of the pulmonary exhalant vessels.

Blisters—Venæsection—Nauseants.

b. By stimulating these vessels by the *actual contact* of a medicinal substance.

Allium—Scilla? Balsams—Fœtid Gums.

c. By stimulating the top of the trachea, and thereby increasing the action of the exhalant vessels of the lungs, by a species of *contiguous sympathy*.

Stimulating Lozenges—Linctusses—Inhalation of certain vapours.

CLASS II.—MEDICINES WHICH DIMINISH THE INORDINATE FLOW OF FLUID INTO THE LUNGS, AND RENDER THE EXPECTORATION OF THE REMAINDER MORE EASY.

a. By removing the debility of the exhalants.
Sulphate of Zinc—Bitter Tonics.

b. By increasing the power of the absorbents.
Digitalis—Nicotiana Tabacum.

c. By determining to the skin by gentle diaphoresis.
Antimonii Potassio-Tartras.

d. By exciting serous discharges from the bowels.
Saline Purgatives.

CLASS III.—MEDICINES WHICH OPERATE MECHANICALLY, IN PROMOTING THE REJECTION OF ACCUMULATED MUCUS.

a. By stimulating the muscles of respiration.
Ammonia.

b. By exciting vomiting, and thereby compressing the thoracic viscera.
Emetics.

☞ CLASS I.—The exhalants of the lungs, may, as well as those of the skin, be spasmodically constricted, and thus the usual quantity of fluid is not effused; in such cases, bleeding, blistering and nauseants are useful. Some substances which enter the circulation, are more particularly determined to the pulmonary vessels: *garlic* is an instance. Such substances may stimulate the exhalants through which they pass, cause them to pour out more fluid and so to dilute the viscid mucus, and facilitate its escape.

In persons debilitated by age or disease the exhalants of the lungs lose their tone and pour out too large a quantity of fluid; this is observable in *humoral asthma* and *catarrhus senilis*. This may be remedied by general tonics, and by local astringents of the exhalants. The author has found sulphate of zinc useful for this purpose.

The pulmonary absorption is promoted by small doses of mercury, *digitalis* and *nicotiana tabacum*.

In the act of vomiting the thoracic viscera are violently compressed, and the expulsion of mucus from the cavity of the lungs is thus promoted by the associated action of contiguous parts.

Atmospheric changes with respect to moisture and dryness are well deserving of the practitioner's attention; some excellent remarks are made here on their influence in expectoration; for which we refer to the book itself.

CHEMICAL REMEDIES.

There was a time when the various functions of the body were regarded as processes wholly chemical,—when diseases were referred to chemical

agency; and when, as a necessary consequence, medicines were only appreciated as chemical agents, calculated to control or correct such specific action. Those who maintained the supreme and exclusive agency of chemistry, were succeeded by others who denied its powers altogether, and affirmed, that no chemical change could ever take place in the living body, nor any chemical agent be brought to bear on an animated structure.

This controversy, however, like a great many others, in medical history, is in a great degree *verbal;* the ideas attached to the term *chemical*, not having been sufficiently distinct and definite, and each writer having so far adopted the definition, so as to suit his own preconceived opinions and views.

"It is evident," says our author, "that an organized body cannot generate matter, but can only change the modes of its combination, and that its sustenance and reproduction must depend upon the chemical transformation of the substances which are employed as its nutriment, and which contain its own elements. It is at the same time admitted that the attractions which take place under the influence of the vital principle, are generally essentially different from those, by which the same elements are actuated in the laboratory of the chemist; and hence we recognize the existence of a distinct set of laws, determining and regulating the combination and decomposition of all bodies appertaining to living structures, to which the general title of *Vital Affinities* has been applied; but the combinations having been thus determined, chemistry furnishes no farther analogies. The form which matter subsequently assumes is entirely due to vital power, which has nothing in common with physical agency; how, for instance, can we explain, as Liebig observes, its tendency to take the form of globules, or rather of cells, in which a containing cyst and a contained matter are usually discernible? We may, by chemical agency, produce the constituents; but we can never mould them into an organized tissue, or an organic cell.

"In order to avoid any misapprehension that may arise from the doubtful import of terms, the reader is desired to keep in mind the following definitions:—CHEMICAL CHANGES are such as take place between the constituent parts of inanimate bodies, according to certain laws of affinity, which have been established by experiment, or deduced from theory. CHEMICO-VITAL CHANGES are those transformations, or changes of composition, which result during the performance of the animal functions, but which, at least as far as the present state of our knowledge will enable us to judge, are not conformable with the laws which determine the combination and decompositions of inert matter."

The author remarks, that he does not pretend to say that these distinctions have any existence in nature; they merely mark the boundary of our present knowledge, and may change as science progresses; in fact, this imaginary line of demarkation has, within the last few years, so far altered its range as to have included within the limits of the first class (CHEMICAL) several of the phenomena, which had long been regarded as belonging to the second, or CHEMICO-VITAL; as examples might be mentioned, the formation of *urea*, and the *formic*, *oxalic*, and *allantoic* acids, in our laboratories.

Professor Liebig, by applying to chemical action the dynamic law of La Place and Berthollet, viz. *that a molecule set in motion by any power can impart its own motion to another molecule with which it may come in contact*, has not only beautifully explained the phenomena of fermentation, putrefaction and decay, but, by showing that a body *in the act of decomposition* may, as it were, by an influence exerted beyond the sphere of its own

attractions, impart its peculiar state of transformation to compounds with which it may happen to communicate, has gone far to furnish a parallel to the hitherto mysterious process of assimilation, while it has thrown considerable light on the action of certain organic poisons.

"As a general proposition we are justified in regarding vitality as a power engaged in continual conflict with the physical, chemical, and mechanical forces to which every species of inanimate matter is invariably subjected. The animal machine is constantly surrounded and assailed by agents whose elective attractions for the several principles of which it consists are so numerous and energetic, that its decomposition must inevitably and speedily result, were not the cohesion of its molecules, maintained by the conservative influence of a superior power—that power is LIFE; and as its energies decline we discover the ascendancy of chemical forces, until, at its final extinction, the elements of which the animal body consists fly off in the form of binary compounds, or, in other words, they undergo that series of changes which constitutes the phenomena of decay and putrefaction."

It was essentially necessary for the preservation of the body that it should have been endowed with a power of resistance to forces calculated to destroy it; it does not follow, however, that Nature will refuse the aid of such chemical powers as may assist her operations, or counteract their tendencies to error. "It would be truly extraordinary," says Liebig, "if the vital principle, which was everything for its own purpose, had allowed no share to chemical forces which stand so freely at its disposal." In fact, the animal economy, in a state of health, affords several obvious instances of chemical agency. In all the chemical processes which take place in the animal economy, we still perceive the control of a power, distinct from those agencies which connect themselves with the phenomena of inert matter.

Since, then, the vital principle, while it vigilantly guards the animal structure from such forces as may injure it, does not oppose such chemical agencies as may be salutary, we are warranted in arguing how far a medicinal substance may be brought to act *chemically* upon the living body.

Our author having shewn that chemical agency is not incompatible with the vital power, and how chemical action is controlled by the vital influence; having shown also the fallacies which the mere chemist is liable to fall into when he turns physician, then comes to consider the action of medicines as *chemical agents*, which subject he discusses under the four following heads:—

1. Can we by chemical means supply the living body with such materials as may be deficient?

2. How far are we able to neutralize, annul, or remove offending materials by chemical agency?

3. Can we oppose and counteract, by chemical means, any undue ascendency of chemical forces in the living body?

4. Are there any agents by which we can, chemically, influence animal temperature?

For the discussion of these questions we beg to refer the reader to the work itself, where he will find them very clearly and satisfactorily treated

under the several heads to which they belong. We next come to the subject of—

REFRIGERANTS, or substances, which diminish the force of the circulation, and reduce the morbid heat of the body, without occasioning any diminution of sensibility or nervous energy. These may be external or local, or internal and general. In the first case their claims to chemical agency are clear enough; not equally so, however, in the latter.

Topical Refrigerants.—In cases of external inflammation, refrigeration may be produced by cold applications, cold water, ice, certain saline bodies in solution, or by evaporation, which is readily accomplished by lotions composed of spirit of ether. A convenient method of keeping up a uniform evaporation, for reducing the temperature of any part of the body, as in the case of fractured limbs, &c., is to allow the gradual distillation of water upon it, through the medium of skeins of cotton, or strips of linen rags, so disposed as to act the part of a syphon, which is readily accomplished by placing one end of the wet cotton in a basin of water, and allowing the other end to hang down over the vessel.

By these means we can directly diminish the activity of the vessels of the part, as, for instance, in burns and scalds, the pain is instantly relieved, and the inflammation reduced: in directing such applications we must take care not so far to reduce the vitality as to endanger the life of the part, and to induce gangrene.

Internal Refrigerants.—There are certain saline bodies which, by undergoing a rapid solution, and thus acquiring an increased capacity for caloric, produce a diminution of temperature; and if this take place in the stomach, the sensation of cold which it will produce is equivalent to a partial abstraction of stimulus; which, being extended by sympathy to the heart, occasions a transient reduction in the force of the circulation, and by this, or by a similar sympathetic affection, causes a sensation of cold over the whole body.

The theory advanced to explain the refrigerant operation of vegetable acids, acescent fruits and herbs, and certain other substances, is based on those chemical views respecting animal heat, in which the consumption of oxygen in the act of respiration is considered the principal source. Dr. Murray says,—

"It is established by numerous experiments and observations, that the quantity of oxygen consumed in the lungs is materially influenced by the nature of the ingesta received into the stomach. When the food and drink are composed of substances which contain a small proportion of oxygen, it is known that the consumption of oxygen in the lungs is increased, and this even in a short time after the aliment has been received. Thus Mr. Spelding, the celebrated diver, observed, that whenever he used a diet of animal food, or drank spirituous liquors, he consumed in a much shorter time the oxygen of the atmospheric air in his diving-bell; and he had therefore learnt from experience to confine himself to a vegetable diet, and to water for a drink, when following his profession. During digestion, too, it was established by the researches of Lavosier and Seguin, that a larger proportion of oxygen than usual is consumed. Now, if the animal temperature be derived from the condensation of oxygen gas by res-

piration, it must follow that an increase in the consumption of that gas will occasion a great evolution of caloric in the system; while a diminution of it will have an opposite effect. If, then, when the temperature of the body is morbidly increased, we introduce into the stomach substances containing a large proportion of oxygen, especially in a loose state of combination, we may succeed, according to this theory, in reducing the general temperature. This, it is suggested, we may accomplish in part by a vegetable diet, but still more effectually by the free use of the *vegetable acids*, which are readily acted on by the digestive powers, and assimilated with the food; and, as the large quantity of oxygen which they contain is already in a concrete state, little sensible heat can be evolved during the combination of that element with the other principles of the food. The nutritive matter which is received into the blood, containing thus a greater proportion of oxygen than usual, will be disposed to abstract less of it from the air, during its transmission through the lungs, and consequently less caloric will be evolved; the temperature of the body will be reduced; and this again, operating as a reduction of stimulus, will lessen the number and force of the contractions of the heart."

The experiments of Crawford go to prove the chemical origin of animal heat; it is now however generally admitted that the temperature of animals derives its origin from a living principle, although the absorption, in the act of respiration, may indirectly contribute to its production, as a stimulus to the nervous power which produces it. If the heat of the body depended on respiration alone, any one might, by a voluntary effort of quick, deep, and prolonged respiration, increase it at will.

Dr. Murray's theory of animal heat has acquired a renewed interest from the one lately proposed by Professor Liebig, for the purpose of explaining the conversion of the salts of organic acids into carbonates during their transit through the body, and which theory, like that of Dr. Murray's, seeks to establish certain chemical relations between the functions of the digestive and respiratory organs.

"The conversion of these salts of *organic* acids into carbonates," says the Professor, "indicates that a considerable quantity of oxygen must have united with their elements. In order to convert one equivalent of *acetate of potass* into the carbonate of the same base, *eight* equivalents of oxygen must combine with it, of which either *two* or *four* equivalents (according as an acid or neutral salt is produced) remain in combination with the alkali; whilst the remaining six or four equivalents are disengaged as free carbonic acid. There is no evidence presented by the organism itself, to which these salts have been administered, that any of its proper constituents have yielded so great a quantity of oxygen as is necessary for their conversion into carbonates. Their oxidation, therefore, can only be ascribed to the oxygen of the air. During the passage of these salts through the lungs, their acids take part in the peculiar process of *eremacausis* (slow combustion), which proceeds in that organ; a certain quantity of the oxygen gas inspired unites with their constituents, and converts their hydrogen into water, and their carbon into carbonic acid. Part of this latter product (one or two equivalents) remains in combination with the alkaline base, forming a salt which suffers no farther change by the process of oxidation; and it is this salt which is separated by the kidneys or liver. It is then evident, from this theory, that the presence of organic salts in the blood must produce a change in the process of respiration.

"A part of the oxygen inspired, which is usually combined with the constituents of the blood, must, when they are present, combine with their acids, and thus be prevented from performing its usual office. The immediate consequence of which

will be the formation of arterial blood in less quantity, or in other words, the process of respiration must be retarded."

ANTACIDS.

These are remedies which obviate acidity in the stomach and alimentary canal by combining with the acid and neutralizing it. Here we have a decided instance of chemical action—an acid within the body removed and its effects arrested, by the employment of such chemical substances as are capable of neutralizing an acid out of the body. If the antacid employed be a carbonated alkali or earth, we have a disengagement of carbonic acid, just as we should have in the laboratory, and a new compound formed, the operation of which will vary according to the antacid employed; if magnesia be employed, a slightly purgative salt will be formed; if lime, a salt with an opposite property, the salts formed by the fixed alkalies have a tendency to act on the kidneys. The acid which it becomes necessary to remove may exist in any part of the alimentary canal; very frequently in the cæcum, where vegetable food has been supposed to undergo a second digestion. If the cæcum be the seat of the acid, the fixed alkalies will not be always effectual, as they may be neutralized or absorbed before they can reach the part in question; for which reason magnesia is to be preferred. In some cases, alkaline or saponaceous enemata may be useful to neutralize acidity in the lower bowels. Under some circumstances *carbonate of ammonia* has an advantage over the fixed alkalies as an antacid, in consequence of its being able to neutralize a portion of the acid matter which appears to exist in a gaseous state in the stomach, and which, on that account, will elude the action of the soda or potass. It is well worth remarking that, where our object is to correct the *lithic acid* diathesis, potass should be preferred to soda, since the latter alkali forms a less soluble salt with the acid in question, and is therefore liable to increase a tendency to urinary deposits.

ANTILITHICS, AND LITHONTHRYPTICS.

Antilithics are substances which are considered to possess the power of preventing those mechanical deposits from the urine, which give origin to calculous concretions. They may belong to the class of *vital*, as well as to *chemical* agents.

Lithonthryptics are substances such as, by a *chemical* action, have been supposed capable of dissolving, or breaking down calculous concretions, whether lodged in the kidney, or bladder. Our author now considers 1st, the composition of healthy urine—2nd, the changes which its several principles undergo in the formation of deposits—3rd, the conditions of the body under which such deposits take place—4th, the remedies by which they may be prevented—and 5th, the means by which, when retained in the body, they may be removed.

1st. *Composition of healthy Urine.*—The quantity voided, and consequently its colour, is necessarily variable, depending on the amount of liquids taken, the condition of the skin, and that of the other excretions,

and the state of the atmosphere; but under the ordinary circumstances of health and habits. Dr Prout considers that, in our climate, the average in 24 hours is from 30 oz. of *specific gravity* 1·025 in the Summer, to 40 oz. of *specific gravity* 1·015 in Winter. There is however a marked distinction between that which is voided after drinking and a moderate meal, and that secreted after the completion of the digestive process; to the former is given the name of *Urina Potûs*; to the latter, and from which alone any correct estimate of its nature can be fairly deduced, that of *Urina Sanguinis*. It should slightly redden litmus paper, and on cooling it very frequently exhibits a slight mucous cloud. In composition this fluid must be considered as the most heterogeneous and variable of all the animal secretions; the proportions of its different ingredients constantly changing, and often without even a reference to any unhealthy condition of the system. The *animal principles* contained in the urine are as follow: water, urea, lithic acid, pure lactic acid, lactate of ammonia, and animal matters not separable from these. Mucus of the bladder. *Alkaline and earthy Salts* in the urine: sulphates of potass and of soda—phosphates of soda and of ammonia—muriates of soda and of ammonia—earthy phosphates, with some fluate of lime—silex.

Urea formerly was considered as peculiar to urine, and the exclusive result of the action of the kidneys on some constituent of the blood: experiments have now proved that it pre-exists in the blood, and in certain renal diseases is retained by it in considerable quantities, while in health it is immediately removed by the kidneys, those organs, however, merely acting as outlets for its elimination. It is the *Lactic Acid* and the animal matters associated with it that impart to the urine its characteristic odour. Wöhler has proved urea to be a *cyanate of ammonia*. According to Prout urea is a crystallized body, leaving a sensation of coldness on the tongue, like nitre; its smell faint and peculiar, but *not urinous*—it is neither sensibly acid nor alkaline; and although it unites with several acids, thus forming the *nitrate*, *oxalate* and *lactate of urea*, yet it does not neutralize them. In damp weather it is slightly deliquescent: at 250° it fuses into a colourless fluid, and at a higher temperature is decomposed into *ammonia*, *cyanate of ammonia* and *dry solid cyanuric acid*. Combined with the elements of water it assumes the form of *carbonate of ammonia*.

Lithic Acid.—With respect to urinary deposits this is by far the most important principle in the urine—it is always combined with ammonia in the natural state of the fluid; from which the weakest acid, however, can separate it. Pour a portion of any acid into urine, and down goes a red precipitate, which is a pure *lithic acid*. This is a case of simple affinity; the *lithate of ammonia* is decomposed, the ammonia combines with the precipitant, and the *lithic acid* is separated; upon which plain fact rests the whole theory of lithic acid deposits and the treatment by which they are to be prevented. This acid, like urea, is rich in nitrogen, the former containing 46, the latter, 30 per cent.—hence Majendie conceived that its secretion depends on the nitrogen received from alimentary substances, since the urine of animals, confined to food that does not contain it, is free from lithic acid. It does not pre-exist in the blood, but is elaborated by

the kidneys, although it sometimes makes its way into the circulation, since the *chalk-stones* deposited in the cellular membrane of gouty persons are composed of *lithate of soda.*

Alkaline and Earthy Phosphates.—The phosphoric acid appears to exist in the urine in combination with soda, potass and ammonia, as well as with magnesia and lime; and in such proportions as to constitute super-salts, or biphosphates.

Lithic acid appears to be susceptible of various modifications. By the action of dilute nitric acid, with heat, we obtain by gentle evaporation transparent colourless crystals, the *erytheric acid* of Brugnatelli (the alloxan of Liebig.) If, into a strong solution of these crystals whilst boiling hot, we carefully drop some pure ammonia, the solution acquires a beautiful purple colour, and crystals of *purpurate of ammonia* form and subside. If these crystals are treated by means of potass and sulphuric acid, pure *purpuric acid* is obtained in the form of a yellowish or cream-coloured powder. Without entering into further minutiæ, it may be observed that the lithic acid may, through chemical agencies to which the urine is exposed from the reaction of its own elements, be made to assume various characters, by which the aspects of urinary sediments will be influenced: there cannot be a doubt, for instance, that in certain states of disease, the *purpurates* may give to the sediments those beautiful hues formerly attributed by Prout to an acid which he called the *rosacic.*

The *earthy phosphates* may, from an excess in quantity, be separated from the urine, or they may fall down from the action of an alkali abstracting a proportion of phosphoric acid; or a *triple phosphate of magnesia and ammonia* may be produced by the development of ammonia.

The alkaline principles of the urine are often in excess; and it has been observed that an excess of the fixed carbonated alkalies is always accompanied by that of the carbonate of ammonia, a condition of the urine which is highly favourable to a deposition of the phosphates.

Urea would appear, under certain circumstances, especially if the fixed alkalies be in excess, to be converted by the kidneys, or occasionally to be decomposed in the bladder, into carbonate of ammonia, which thus becomes the active agent in precipitating the *phosphate of magnesia* in the form of the triple phosphate.

Besides the above-mentioned ingredients of the urine which are essential, we find in certain morbid states, *albumen, fibrine, colouring matter of the blood,* which have passed unaltered through the kidneys—*nitric acid—oxalic acid—benzoic acid?—hippuric acid—carbonic acid—xanthic oxide—cystic oxyde—sugar—bile, pus* and *mucus.*

Urinary deposits may be arranged under three divisions. 1st. *Pulverulent,* or *amorphous sediments.* 2d. *Crystalline sediments,* usually called *gravel.* 3d. *Solid concretions* or *calculi,* formed by the aggregation of the preceding.

1. *Amorphous sediments,* consist of *lithate of ammonia,* or *lithate of soda or of lime,* with colouring matter—or of the *phosphate of lime,* or the *triple phosphate of magnesia and ammonia.* In the latter cases white, or faintly tinged.

2. *Crystalline Deposits.*—When the *lithate of ammonia* is decomposed

by a free acid, the lithic acid falls down in small crystals (*red gravel*); whereas the triple phosphate is deposited as white shining crystals, (white gravel.) Sometimes it forms as a pellicle on the surface, exhibiting prismatic colours.

3. *Solid Concretions or Calculi.*—Nitric acid may be habitually discharged for years, before that condition of kidney takes place which appears to dispose its concretion into a calculus. Mr. Earle has endeavoured to show that the formation of renal calculi may sometimes arise from a local injury affecting the loins and kidney. The lithic acid would appear to be deposited in the *tubuli uriniferi* in a hydrated gelatinous state, and becoming more or less concreted, from the absorption of its water, escapes into the *infundibulum* and *pelvis* of the kidney, from which it may be propelled by the current of urine along the ureter into the bladder.

(We omit giving the arrangement and characters of calculi here, as we gave them in a late number of the Journal.)

III. *The Condition of the System under which Deposits take place, or the Causes by which they are induced.*

The line of demarkation by which healthy and morbid urine are separated from each other is very vague and fugitive, nor are slight deviations of any importance; slight excesses or errors in diet, unusual exercise, or rest, may produce a passing influence on the character of the urine; these Dr. Prout has called the *sediments of health.* The continuance of such sediments, beyond certain limits, might denote a state of the system, which, under the necessary circumstances, might raise them into the importance of gravel or stone.

There are, we have seen, two very distinct species of deposit, the one consisting of lithic acid, the other of phosphoric acid, in combination with different bases. The state of the system in reference to these deposits is as different as the deposits themselves. The lithic acid diathesis always denotes a *sthenic*, while the phosphatic indicates an *asthenic* condition. In the one case the urine is generally acid, in the other it tends to become alkaline. The decomposition of the *lithate of ammonia* takes place from the action of an acid, and it is probable that in the living body the *lactic acid* is the agent by which it is effected, although in some cases we may suppose that it is at once secreted in a free state by the kidney. Now the lactic acid is one of those forms in which Nature expels excrementitious matter from the system, through the skin or kidneys: if therefore it should be abundantly secreted, or its usual exit through the perspiration be obstructed, a preternatural quantity will be thrown upon the kidneys and lithic acid be thus precipitated. Several tropical practitioners have stated that calculous diseases are almost unknown in those latitudes, which almost shows a connexion between the active function of the skin and urinary deposits.

Indigestion is the common cause of the deposition of lithic acid. Unlike the lithic acid deposits, the phosphatic sediments denote a cachectic or asthenic state of the system; alkaline urine is the result of debility. Whatever depresses the powers of life, disposes the urine to become alkaline; hence injuries of the spine are frequently followed by such an effect, as was first noticed by Sir B. Brodie. The transformation of urea into

carbonate of ammonia is generally the source from which the phosphate of magnesia derives its ammoniacal precipitant; and this may take place in the bladder in cases where it has lost its *governing power*, as from diseases in the spinal marrow, or from some local affection of the bladder, or prostate gland, in consequence of which the urine being detained, undergoes an incipient process of putrefaction; hence, in elderly people who are frequently incapable of wholly evacuating the bladder, the deposition of the triple phosphate is very common. Alkaline urine is also very deleterious in another respect, by acting as an irritant on the membranous surfaces with which it comes in contact; it sometimes produces chronic inflammation of the mucous membrane, of the kidneys and ureter, extending to that of the bladder.

Our author next points out the remedial means by which deposits may be prevented.

Urinary deposits being indications of constitutional disturbance, the first object will be to correct the particular condition of the system on which they depend—it will at the same time be necessary to prevent their deposition in the form of gravel or calculus.

The deposition of the lithates denoting an imperfect performance of the digestive function, the indication will be to restore the assimilative organs to a healthy condition. The decomposition of the lithate, and the consequent deposit of the insoluble lithic acid, constituting *red gravel*, is the effect of an acid re-agent generated in the system. Hence the necessity of avoiding such food as is likely to become acescent; we must also promote a healthy action of the skin by exercise, and if necessary, by the use of vapour baths, by which the system will be relieved from the acid matter which must otherwise pass off by the urine. The anti-lithic medicines to be employed are the alkalies, and alkaline earths, and especially magnesia. Potass to be preferred to soda. Carbonate of magnesia in doses of ℈j. to ʒj. is a valuable substitute for alkalies in the lithic acid diathesis. Great caution is necessary in the exhibition of alkaline remedies. Healthy urine will turn blue litmus paper a little red, and alkalies should not be employed to such an extent as to destroy this property; still less ought it to be rendered alkaline; it should not, for instance, be made capable of restoring the blue colour of litmus. Lime-water has been recommended as an antacid. The common saline draught is often found an agreeable mode of giving an alkaline anti-lithic. The occasional interposition of an aperient during an alterative course will be found useful.

Dr. Ure has recently ascertained that benzoic acid has the property of converting the lithic into hippuric acid. If this be true, we are presented with an agent which may be very usefully applied. Dr. Ure states that, either the benzoic acid itself, or a benzoic salt will fulfil the desired indication, the dose being regulated according to the state of the renal secretion,—he recommends it to be combined with the *phosphate* or *biborate of soda*, either of which salts will increase its solubility without diminishing its specific power.

In endeavouring to check the deposition of the *phosphates*, we should remember that we have to deal with a state of the system very different from that which exists in the *lithic acid* diathesis. The *phosphates* being deposited by an alkaline re-action of the urine, it is evident that acids are

the appropriate anti-lithics—great caution however is necessary here in prescribing either an acid or alkali; for whenever that natural acidity of the urine is destroyed which is necessary for keeping the phosphoric salts in solution, we shall produce a sabulous deposit. Where an acid is indicated the *hidrochloric* or *nitric* are as effectual as any that can be given.

With respect to the means by which calculous deposits, retained in the body, may be removed, there is considerable difficulty, in as much as the resistance caused by the cohesive power and the small surface which they present to the decomposing agent, render such a concentration of chemical power necessary for their solution, as neither the stomach nor bladder could bear with impunity. However, though we may not succeed in materially affecting large concretions, we may make an impression on small calculi, so as to blunt their sharp edges, and cause them to be discharged by the urethra with less difficulty; we may even convert a rough into a smooth calculus, and we may prevent its further increase by modifying the character of the urine, but great care and judgment are necessary to accomplish this. If a lithic acid calculus be present in the bladder, its increase may be prevented by alkalies, but should these be carried too far, we shall cause a deposit of the phosphates.

The mineral acids seem to exert a greater solvent influence on phosphatic calculi, than the alkalies do on those of the lithic acid. The injection of dilute nitric acid through the urethra into the bladder has been tried by Sir B. Brodie and has proved successful. This method is peculiarly deserving attention, as being an application in cases in which in neither lithotomy, nor lithotrity can be employed with safety or success, viz. in cases of the deposition of the phosphates, accompanied with a diseased state of the prostate and bladder.

We find we have gone so far in our analysis of this work that we must stop short here. The author we find has made several emendations in this edition which must considerably enhance its value—he has done more; he has incorporated several of Liebig's new views on the actions of substances taken into the system. His remarks on the action of diuretic medicines, on the most judicious and appropriate method of selecting them so as to suit the particular case, are invaluable to the practitioner; indeed this one section leaves Dr. Paris's book without a rival. The section on Antilithics and Lithonthryptics contains valuable rules and directions well deserving careful and attentive perusal. The subject of Urinary Diseases is treated with peculiar clearness and great judgment; in fact this part of the work may be considered an excellent analysis of the best works we possess on this important class of diseases; more especially of the works of Sir B. Brodie and Dr. Prout—in short we may sum up our opinion of Dr. Paris's *ninth* edition of his Pharmacologia in three words; *decies repetita placebit.*

Before quitting the Doctor, however, we have one word to say to him regarding his Greek—at page 87 he gives in a note a passage from the Hecuba of Euripides, Scil. νασμος μελανανγης, not μελανανγες as the Doctor has it, and he favours his readers with a translation of it; he renders it, *black-flowing splendour*—surely the least reflection would have shown him that to such words no rational idea can be annexed—*black flowing splendour* is decided nonsense—and we assure Dr. Paris that it is not "all the same

in the Greek"—the obvious and simple meaning of the words is, *black-shining stream*. It is astonishing that this error prevades all the former editions. We apprehend *Dulces reminiscitur Agos* will not be predicated of Dr. Paris after such a specimen.

A Practical Treatise on the Diseases peculiar to Women. By *Samuel Ashwell*, M.D. Part II. pp. 250, 8vo. 1843.

This is a continuation of the Work we had occasion to speak very favourably of in our Number for January, 1841. It completes the subject of functional and commences that of organic diseases of the internal genitals. A part to be published soon will complete the latter, and treat of the affections of the external parts. The analysis we propose to give demands all our space.

Hysteria.

Hysteria Dr. Ashwell considers "essentially to consist in excitement and irritation of the numerous and important nerves supplying the reproductive system." There are few practitioners but have been deceived by this proteiform malady into the belief of the existence of important affections, and few who cannot call to mind the satisfaction they have experienced in being able to establish that certain alarming symptoms arose from the hysteric diathesis. Quite aware of this, the author yet impresses upon us that we must always remember that hysteria itself has its limits, and that not only may congestive and inflammatory diseases be mistaken for it, but that it may itself terminate in these. No one can doubt that many local affections have been too hastily classed as hysterical, and treated empirically, but we feel certain, that the prevalent error of young practitioners is to run into the opposite extreme, and treat every painful affection as if of an undoubted inflammatory nature. It is consoling to remember that "where the hysteric diathesis really prevails, recoveries sometimes occur from states in which all hope has been laid aside. Thus paralysis, and difficulty of swallowing, and great debility, are extraordinarily recovered from; and, occasionally, when phthisis and the emaciation supposed to be its direct result, have reached an apparently hopeless point, the patient most singularly and inexplicably recovers." The author has also observed that diseases destructive of life, especially phthisis, are slower in their progress in the hysterical.

The *diagnosis* of a disease like hysteria, which simulates so accurately so many other affections, is both difficult and important, and is chiefly accomplished by the observance of incongruities in the assemblage or sequence of certain sets of symptoms, which, in the disease with which it is confounded, are found to be consentaneous. Even the paroxysm itself, although usually easily distinguished, may be sometimes mistaken for that of epilepsy. Marshall Hall observes that, much as the larynx may be affected

in hysteria, it remains unclosed, and we have heaving, sighing inspiration, while, in epilepsy, we find violent, ineffectual efforts at expiration. The epileptic seizure is usually more sudden, and the deprivation of consciousness more complete; and it occurs more frequently in men than women. There is seldom biting of the tongue, or frothing of the mouth in hysteria, nor is it followed by the heavy sleep, and insensible pupil. The physiognomy of one liable to epilepsy soon becomes peculiar.

Treatment.—The author truly observes that few practitioners like to be saddled with the treatment of a case of true hysteria; but he recommends those who do undertake it to thoroughly investigate the condition of the general health and of the various functions, instead of merely attacking the local symptoms which may present themselves, and which may lead him a chase over the entire frame. It too often happens that, however judiciously the treatment may be conducted, it proves of little avail. During the *paroxysm*, generally, little need be done beyond the application of cold water and a smelling-bottle. "It has already been observed, that consciousness is generally retained, and enough of volition, except in convulsive and epileptic hysteria, to enable the individual to avoid danger; so that as the fit, by equalizing the circulation, and by removing nervous irritation has upon the whole a beneficial effect, restraint need form but a small part of the treatment. A lady, whom I long attended, always rejoiced when the fit was over, because it relieved her system generally, and especially her brain, from painful irritation, which had often existed for several previous days." Encouragement to use voluntary efforts to repress the paroxysm, cautiously practising on the fears of the patient, or the swallowing of iced water, have each been found useful. When there is no plethora diffusible and fetid stimuli may be given; but, where plethora exists, and important discharges are suppressed, a moderate bleeding, or rather cupping low down between the shoulders, is of service. When there is great rigidity of the muscles of the head and trunk, and impaired deglutition, turpentine, or cold water glysters should be administered. The mustard bath, as high as the knees, is a good derivative, and "on some occasions, I have known the attack quickly terminated by ringing a loud and shrill-sounding bell close to the ear for several minutes." An approaching attack may sometimes be warded off by the affusion of cold water, its injection into the rectum, or the swallowing half a drachm of ipecacuanha.

The Treatment in the Interval,—will require modification according to several circumstances. A *morbid condition of the uterine system* is very frequently found in hysteria, as is seen, in girls who menstruate with difficulty, ill-assorted marriages, young widows, &c.

"I am aware it may be urged, in opposition to these opinions, that structural lesions of the uterus are very common in women who have never had hysteria. Of the truth of this statement, to its full extent, I am more than doubtful; as I have accurately ascertained, both in hospital and private practice, that such individuals are by no means, especially in early life, so exempt from this common malady: nor must it be forgotton, although there are exceptions, that these affections generally do not occur until the reproductive faculty is either about to cease

naturally, or has become seriously impaired by the progress of these organic changes." 230.

Although *plethora* is not a common accompaniment, yet it is occasionally found, when there is defective menstruation, slothful habits, suppressed evacuations, &c.; and the usual remedies for this condition may avert the attacks, and if persevered in, in a modified manner, remove the disposition to them. Agreeing with the author in these views, we may observe, that the plethora is often rather apparent than real, and the existence of hysteria affords a *prima-facia* probability that depletory measures, to any extent, or for long continuance, will not be borne. The case of *hysteria with debility* is, Dr. Ashwell observes, far more common, and when this is, as is often the case, complicated with some local vascular congestion or excitation, it requires delicate treatment. A case in which local depletion and counter-irritation are to be combined with a good diet and tonics. The *gastro-intestinal disorder*, often attendant upon hysteria, may produce great tenderness in the hypogastric region, relievable by leeches applied to the abdomen or to the anus, or excessive flatulence, frequently itself inducing a paroxysm. This last is to be thus treated—"a small tumbler of water, as hot as it can be swallowed, during or immediately after the meal, with some powdered ginger, a little brandy, sal volatile, or a few grains of Cayenne pepper entirely dissolved in it, seldom fails to afford relief: friction by the hand or flesh-brush over the abdomen, and in really severe cases, the injection of a pint of hot water into the rectum, with or without assafœtida, may be tried."

The *diet* must be simple, nutritious and slightly stimulating, and the irritation of worms, or fæcal accumulations guarded against by the use of purgatives.

Treatment of peculiar Symptoms.—Notwithstanding the general treatment employed these may have to be met empirically. *Headache*, and its treatment, have already been considered in the former part of the work. In this distressing and obstinate malady the author has often found the following draught useful. ℞. Tr. valer., amm., sp. eth. s. c., Sp. lav. c. āā 3ss. Tr. hyoscy. ℥xx. M. camph. 3x. 2da vel 3tia horâ. *Pain of the left side* is perhaps the most difficult of all hysterical symptoms to relieve. The author does not agree with Mr. Tate, in referring this generally to spinal affection, and has seen much harm result, both from the rough manipulations employed to ascertain whether tenderness along the column existed, and from the depletion, and counter-irritation employed to relieve it. The whole armoury of the Pharmacopœia has frequently been exhausted in vain in these cases. Dr. Ashwell has found the following liniment useful. ℞. Ether. rect., sp. camph., tr. opii., tr. lyttæ āā 3iv. M.

In regard to hysterical females acting as *nurses* the author observes:

"It is not unimportant to observe, that although marriage often cures hysteria, women who have *long suffered* from its effects, rarely make good nurses. Doubtless there are exceptions to this fact; nor is it intended to be urged, that such women cannot suckle at all; nor that they may not occasionally be benefited by lactation. But where, prior to a late marriage, hysteria has existed for years, in association with extreme susceptibility, peevishness of disposition, and thinness of person, it is for the most part undesirable that such mothers should suckle their offspring. The milk is often disordered, the child's digestive system is thereby deranged, and a predisposition to nervous disease may be communicated." 258.

Of the Irritable Uterus or Hysteralgia.

"Definition.—*A permanent and painful sensibility of the uterus, and especially of its neck: often accompanied by increased frequency of pulse, a dry hot skin, and generally, in protracted cases, with stomach and renal derangement. The disease usually occurs during the middle period of life; and commonly prevents conception. It is exceedingly difficult to cure, even to palliate: and, it is said, that it is neither attended by, nor tends to produce change of structure.*

This disease, Dr. Ashwell remarks, both as to symptoms and treatment required, resembles a permanent dysmenorrhœa. He has never met with it at an earlier age than 23, but Dewees has seen it at 18. It occurs only in the married. The severe pain and suffering characterizing the malady are much exasperated by the slightest movement or exertion, and especially by the motion imparted to the cervix, during the efforts at stool, or in passing urine. Excessive agony is also produced if the cervix be rudely touched during an examination: but Dr. Ashwell does not confirm the statement of Dr. Gooch, that the tenderness is confined to the cervix, and does not extend to the vagina. The contrary is the case, although such limitation exists in the rarer disease of acute inflammation of the cervix. The uterus is found low down in the cavity of the pelvis, or even prolapsed, and its cervix is often somewhat shortened, and expanded, and occasionally puffy and swollen, and the lips of the os are more than naturally closed. The suffering is greatest about the period of menstruation, which continues regular, but scanty. In three of the author's cases, the disease has gradually disappeared with the decline of the catamenia, without leaving any morbid condition of the cervix. He does not, however, agree with Gooch, that this is a mere state of irritation, but believes, that examination by the speculum, and the effects of remedies, both prove a condition of subacute inflammation to exist, and that, in some cases, this may go on to structural change. The predisposing causes are of difficult discovery, for, although the disease chiefly occurs in those of a highly nervous temperament, it may do so in the robust. Life is seldom in danger, but the case is always tedious, and even the degree of relief to be obtained, and freedom from frequency of relapse, will much depend upon the perseverance and quietude of the patient. The treatment is very much like that already recommended by the author for dysmenorrhœa. Repose is essential, perhaps for months; active purging is injurious: a generous yet non-stimulant diet is requisite: steel in moderate doses and long-continued, and narcotics in small quantities, and frequently varied, are the best medicines. Low diet, drastics, close rooms, and general bleeding are injurious. In several cases Dr. Ashwell has found the scarification of the cervix, as recommended by Mr. Fenner, or applications of leeches to that part, very beneficial. This is only the case when there is evidence of increased congestion and vascularity, which indeed are usually present; but in simple neuralgia, when the cervix is even small and shrivelled, change of air, sea voyage, chalybeates, and means of that description, are to be employed. Pessaries, even where no marked uterine descent exists, provided the vagina be not too tender

and irritable, will give great relief. "In several instances every other measure was fruitlessly employed: but the use of a circular box-wood pessary, for three or four months, seemed really to have cured the affection."

General Remarks on the organic Diseases of the Uterine system.

In investigating organic diseases of the uterus we avail ourselves of several means of inquiry, such as the history of the symptoms, the touch, speculum, stethoscope, and inspection of the discharges. The degree of *Pain* present in the early stages is frequently so slight, as to prevent attention being drawn to the affections until too late to remedy them, while, in some cases, even the latter stages are attended with very little suffering. In functional and inflammatory disorders acute pain early manifests itself. Even when pain does occur it is not characteristic as regards each affection, but arising chiefly from increased bulk and the displacement of other organs, it is common to several.

Emaciation is almost always present, in malignant disease, but in hard tumours of the uterus it frequently does not occur until the latter stage. The *examination by the hand* is most important, not only to detect what description of organic disease may be present, but also whether this be complicated with pregnancy: "for, if there be be no fœtus in utero, a palliative treatment will be proper, whereas, if the patient be pregnant, her safety mainly and almost solely depends on the induction of premature labour." In regard to the mode of making the examination:

"The patient must be placed on her left side, the usual obstetric position; and the labia and nymphæ being carefully separated, the forefinger of the right hand will commonly reach and touch the parts satisfactorily. It must, however, be remembered, that the sensitive part of this finger can only examine with nicety that portion of the neck and os lying opposite to it. To examine the whole circumference of the neck, the index finger of the left hand must also be used; and then it is scarcely possible that any morbid spot, or induration, can escape detection. As in the operation of lithotomy, a deep perineum increases the difficulty, so in the internal examination, an unusually long vagina, a broad perineum, and large and fat labia, present obstacles to the investigation by a single finger. In such patients, two fingers, or perhaps the whole hand must be used —having been previously lubricated by oil, rather than by any unctuous substance." 264.

Provided we can assure our diagnosis the fewer means we make use of the better, for, while in almost every case, the touch may be employed at least once, the speculum sometimes give rise to injury of both the unhealthy parts, and the sound vagina, into which it is introduced. It is very important to remember that there may exist varieties in the cervix as to size and shape, quite independently of disease, for many, by reason of their not knowing these anatomical varieties, have supposed disease to exist which has not been present. A considerable elongation is frequently found, and women, even who have borne children, may have the cervix

compact and small, and perforated by a small circular aperture instead of the normal os. Moreover, Dr. Ashwell states,

"*A large uterus, especially at its lower part, a large and soft cervix, a patulous os, fissured, indurated, and cicatrized, may all exist, without organic, and especially without active organic disease.* Prior to, during, and even soon after the catamenial flow, the body, and particularly the neck of the uterus, is larger, and more supple than natural; and imparts to the finger a similar sensation to that communicated in the early months of gestation. Frequent sexual intercourse will also induce this state of parts. During natural and healthy menstruation, the orifice of the neck is very dilatable, and easily allows the passage of the finger: this will but rarely occur at other times, independently of disease; and the opinion will be unfavourable, if the finger, on passing into the canal of the cervix, shall touch a puckered, coarse, and rough membrane. *Induration* and *cicatrisation*, in slight degree, may result from lacerations, during labour, and from the inflammation attendant on their union. In old women, it is especially important to remember, that the cervix naturally diminishes in size, and the contraction of its structure is almost invariably associated with considerable induration; but still, without disease. It will not be difficult to appreciate morbid changes in the consistency of the neck: for although the cervix possesses the firmness of a gland, this may, by a practiced examiner, be easily distinguished from the induration, with tenderness, of chronic inflammation; and still more easily from the almost stony or marble hardness of a schirrhous tumour. I cannot forbear to caution the practitioner against a hasty and alarming prognosis, where *unhealthy softness is connected with losses of blood and irregular catamenial discharges.* Such a condition is curable; and occasionally, where little has been done, it has continued for years, perhaps till the final departure of the catamenia; and the cervix has then acquired its usual hardness. Pain and heat, (absent when the os uteri is in a healthy condition) in high degree, are both present in inflammation of the cervix; while in the early and more advanced stages of organic disease they are often, if not generally, absent." 269.

The Speculum.—By gently overcoming the resistance of the sphincter vaginæ, and avoiding stretching the fourchette, the instrument may easily be introduced, but some care is then required in availing ourselves of it.

"The position of the neck is occasionally changed, being placed more forward or posteriorly than natural. To obviate this difficulty, and to bring the cervix within the end of the tube, the speculum must be elevated or depressed. Sometimes from spasmodic contraction, induced by the passing of the cylinder, a fold of the mucous membrane of the vagina is forced into the aperture of the speculum, and may be mistaken for the cervix: the least movement, however, of the instrument, will cause the slipping away of the portion thus placed; and the recognition of the neck, which is glandular, smooth, and without rugæ, and paler than the vagina, is not difficult. The whole circumference of a very large cervix cannot be examined at once: the position of the speculum requires attention; and if the parts are not morbidly sensitive, the instrument is easily and safely turned in the vagina; this caution is important, as very lately I overlooked a rather large ulcer on the inferior and posterior surface of the cervix, from a neglect of it." 271.

The appearance of the cervix is thus described:

"In health the cervix uteri is, externally, of pale colour, having the aspect of polished skin; and it is easily distinguished from the lining membrane of the vagina, which, from its different structure, and greater supply of blood, has a much deeper tint of red. These parts are naturally covered with a thick mucus;

a fact of importance, as, if it be not removed by lint or a soft brush, abrasions or ulcerations, being thus obscured, might be overlooked."

The author looks upon the speculum as a most valuable instrument both for the detection of the diseases of the cervix, and for the application of the appropriate remedies, and regrets its application is sometimes delayed so long. In slight cases of leucorrhœa and uterine irritation it is prejudicial. In the very young and very old its introduction is often difficult and dangerous, and therefore not to be attempted. When the cervix is much inflamed, or the vagina very irritable, these conditions must be removed before employing the speculum.

The Stethoscope is of value in aiding in the detection of pregnancy, complicating organic disease of the uterus. But the placental souffle may be exactly imitated by the pressure of a tumour upon any of the large abdominal vessels.

The Discharges.—Much information, which can be relied upon, cannot be obtained from these independently of an examination.

"It may with truth be affirmed, that until an examination has been allowed a serous discharge has often been thought to be the proof of a malignant disease of the os, when it has really only been leucorrhœal; and a discharge of pus, mixed with blood, and slightly odorous, has equally often excited painful anxiety, lest structural disease existed, when in fact neither the finger nor the speculum could detect any mischief."

Prognosis.—The author truly observes, that the practitioner often finds himself in the dilemma, of delivering such a prognosis as will effectually cast down those energies of the patient, on which he relies for assistance in delaying the progress of the disease, or of risking his own reputation, by holding out hopes which the case does not warrant. He especially cautions against a too hasty and unfavourable prognosis, which the difficulty of diagnosis of some of the affections, and the increased chance of curing others in their early stage, his investigations hold out, should alike forbid.

"Occasionally, when a quickly fatal issue has been predicted, marked relief or at least many years of life, not without comfort, and sometimes even of enjoyment, have falsified the too unfavourable and hasty opinion.

"Doubtless if there be predisposition to adventitious heterologous formations, such causes will favour their development; but if there be no such constitutional tendency, these unhealthy states may continue long without assuming an incurable character. In women, the mothers of numerous families, I have several times, independently of any change in the body of the organ, found the cervix large and hard; and when treatment had been long laid aside, I have years afterwards, ascertained that although these conditions continued, yet that there was no development of malignancy." 279.

The Tumours of the Walls of the Uterus characterized by Induration.

These tumours of a fibrous or even calcareous hardness present every

variety as to size. They frequently do not excite attention until by their magnitude they cause pelvic obstruction. The author considers them as a scirrhous variety of carcinoma. They present different symptoms accordingly as they arise from the external or internal portion of the uterus. In reference to those growing *externally* it may be observed, that, sometimes after reaching a certain magnitude, they may remain stationary for years, while, in other cases, after a period of quiescence, their progress becomes inordinately rapid. They do not prevent conception, and this indeed sometimes happens when they have existed for years, and when the period for its occurrence might be supposed to have passed. Notwithstanding the author entertains a strong opinion that these growths are of a cancerous nature, he recommends their treatment by means of iodine.

"The inferences I have drawn from the use of this medicine are as follow. 1st. Its internal administration, and its use, by inunction, is decidedly beneficial; the advantage, if the remedy be judiciously employed, being rarely attended by constitutional injury. 2nd. In hard tumours of the walls, or cavity of the uterus, resolution or disappearance is scarcely to be expected; since the growths are adventitious or parasitic, and are not imbedded in glandular structure. Here the prevention of farther deposit—in other words, the restraint of the lesion within its present limits, and the improvement of the general health—will be the extent of the benefit derived. It must not be supposed that the use of iodine is empirically to preclude the employment of other means: cupping on the loins; a mild, animal, unstimulating, and often, for a time, a milk diet; gentle aperients, and the warm poppy hip-bath, are important adjuvants. In the appended cases it will be seen that I have employed leeches and setons, with marked advantage; and there can be no doubt that sexual excitement must often exercise a prejudicial influence." 293.

The *Submucous Variety*.—Although of less size and induration, yet projecting towards the uterine cavity, and covered with its mucous membrane, these give rise to more dangerous consequences than the tumours already mentioned. It is well known that they rarely ulcerate, unless they occupy the neck or mouth of the womb; but, independently of ulceration, they cause alarming symptoms by the violent hæmorrhages they induce—the blood proceeding, not from the substance of the tumour itself, but from the mucous membrane covering it. It is not common for the tumours to encroach much on the cavity of the uterus. Their indurated structure, traversed with white lines, the circumstance of their being sometimes numerous, and the thickening and induration of the uterus near their site, distinguish them from *polypi*, into which they are never, as imagined by some, converted. The polypus is vascular and easily injected, but not sensible, while the contrary is the case with the hard tumour. Pregnancy may co-exist with the tumour, but rarely with polypus. A ligature which would remove a polypus, would probably include a portion of the contiguous uterine structure, if applied to the tumour. The dangerous hæmorrhages so frequent in these cases, render the adoption of palliative means even, and which is indeed all they admit of, of great consequence. Rigid abstinence from sexual intercourse, the recumbent posture, and a moderate antiphlogistic treatment are required. Narcotic suppositories, and anodyne vaginal injections are useful. Iodine may be employed, but

the author possesses no evidence of its utility. By such means, when the disease is discovered sufficiently early, life may usually be prolonged, the progress of the tumour may be arrested for a time, and the congested state of the uterus become diminished. Mere palliation, and partial exemption from the hæmorrhage form usually the extent of the benefits conferred.

On the Induction of Premature Labour in Pregnancy complicated with Organic Diseases.

The propriety of this practice the author considers to be established by the two following propositions.

"1st. That when death occurs, after a labour so complicated, the result is only slightly, if at all, referrable to the uterus, which rarely sustains any mischief; but is mainly produced by inflammation, softening, and unhealthy suppuration in the growth itself; these pathological changes leading, in some instances, to rapid sinking; while, in others, the powers of the system having been less impaired, death ensues in a few days, from the constitutional collapse, induced by the protraction and difficulty of parturition, and by the contusion and injury done to the tumour and other soft parts. And 2ndly. That premature parturition, artificially induced, rarely occasions constitutional mischief, is easily accomplished, and affords the best, and, in many instances, the only chance of a safe result to the mother. 323.

In reference to the *first* of these, he observes, that tumours obstructing parturition give rise to some of the most serious of obstetric difficulties, for the extent of the obstruction cannot be ascertained with the same facility as when such arises from a contracted pelvis: and even, when the mere difficulties of parturition have been overcome by instrumental assistance, instead of the woman quickly recovering, as she usually does after ordinary instrumental labours, a new train of symptoms, originating in the violence which has been done to the tumour, become developed. In all the cases Dr. Ashwell has seen, and in most he has perused accounts of, the uterus itself, in patients dying under these circumstances has been found unaffected. If these observations hold good in reference to tumours, characterized by mere bulk and induration, they do so in a yet greater degree when a malignant character of the growth prevails. The best practice, prior to the discovery of inducing premature labour, consisted in puncturing and evacuating, as far as possible, the contents of the tumour, and thus relieving it from the injurious and destructive pressure alluded to.

As to the *second* proposition, the author's attention was first drawn to the operation by his having, in one or two cases of labour, complicating tumours of the uterus, during his examinations, separated accidentally the membranes to some extent from the os uteri—a happy accident, indeed, for premature labour coming on, the patients escaped the ill consequences which would have attended, had they gone to their full period. Dr. Ashwell has no doubt as to the complete safety of the practice. He has induced premature labour in a great number of cases, and has rarely found the operation followed by sufficient excitement to give rise to the least anxiety.

He farther adds—

"Fortunately, pregnancy complicated with tumour, is not of such common occurrence as pregnancy with a narrow and deformed pelvis; and, consequently, the necessity for the intervention of art has not been so urgently pressed upon the attention of professional men. Still, if the contingency is more rare, when it does arise, it is infinitely more dangerous, at least if the tumour be large, and so situated as to obstruct parturition. Seeing, then, how admirably the dangers of the former class of difficult labours are evaded by premature parturition, I may be allowed to express surprise that this operation has not been resorted to in these more formidable complications. I contend, therefore, that this practice is peculiarly applicable to these cases, almost independently of any reference to the life of the child. In support of this opinion, it may be observed, that there is a vast difference between cases of pelvic narrowing and deformity, where there is nothing to preclude the safety and desirability of pregnancy but the faulty conformation, and cases of morbid growths and diseased enlargements of organs, which render it urgently important, that impregnation should not occur; or, if it have occurred, that it should not so far advance, as to call into activity the dormant energy of the tumour. The life of a fœtus is, under such circumstances, of comparatively little moment.

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"Another point of importance is, the time when premature labour should be brought on. A variety of circumstances will influence the decision of this question. If the practitioner enjoys the advantage of an early introduction to his patient; if he possess tact enough nicely to examine the bulk and attachments of the tumour; and if he has accurately noted the first attacks of pain in it, and the constitutional impression produced by them; he will not hesitate much as to the precise period when to adopt this measure. I should not delay, if there were constant pain in or near the growth; if the respiration were embarrassed; and if, as a consequence of these conditions, the pulse were quick and irritable, the extremities œdematous, and the functions of the kidneys and the skin were partially or greatly interrupted. When such an amount of evil exists, or rather before the entire series of these symptoms is complete, the moment has arrived to empty the uterus; and I venture this opinion with the more confidence, conceiving that pregnancy will rarely give rise to this amount of mischief till the 6th, or perhaps nearly the 7th month of gestation, when, if turning shall be required, it may be accomplished with only the usual difficulties and hazards." 329-33.

The author cites the practice and opinions of Dr. Robert Lee, as confirmatory of this practice, and of extending the category of cases to which it is applicable, *e. g.* cancer and excrescences of the cervix, malignant disease of the external genitals, and whenever ovarian disease, ascites, heart affections, obstinate vomiting, &c. threaten life.

CONGESTION AND INFLAMMATION OF THE UTERUS.

Before proceeding to treat of the carcinomatous condition of the os uteri, Dr. Ashwell offers some remarks upon enlargement and induration of this part, independently of malignancy, and arising from a congested or inflamed condition of the uterus.

Congestion.—The author does not agree with those who look upon the

state of congestion of the generative organs at the menstrual periods, as attended with serious evil, which, however, may arise, when it is protracted, or terminates in actual inflammation. He considers the fact of the continued regularity of the catamenia, as one principal reason why so many of the organic diseases of the uterus are of such slow growth—many of them, indeed, only appearing after this has ceased, when any increased determination of blood, unrelieved by the menstrual discharge, becomes stationary and mischievous. Congestion may also arise in amenorrhœa, when the progress of the uterine disease will be accelerated, and its severity increased—to be again retarded on the regular re-production of the menstrual flux. It may also be induced by various exciting causes, as excessive venery, mental emotion, inordinate horse or foot exercise, frequent abortion, &c. When the fulness and uneasiness about the pelvic viscera, accompanied by occasional hæmorrhage, has attracted attention, and an examination is made, the uterus is usually found prolapsed, giving to the finger a swollen, œdematous, or doughy feeling, and having its os spongy and patulous. It is rare to find tenderness or heat, but the speculum shows a shining, injected, and venous colour, and frequently a slight exudation. When it occurs merely at the menstrual periods medical treatment is seldom sought, but this becomes of importance, when the congestion, as it usually does, complicates the various other uterine affections. Rest in the recumbent posture is essential, and sometimes sufficient for its relief; and when it is not so, leeching or scarifying the cervix will suffice. When this is objected to, a few ounces of blood may be taken from the arm, at, or just before, the menstrual periods —applying a blister to the sacrum, in the interval. When the affection becomes chronic, the use of an alum hip-bath, formed by the addition of eight or ten ounces of alum to the water, and maintaining its temperature at from 96° or 98° for half an hour, is useful. In Summer, or when the efficacy of the remedy is to be maintained, the temperature must be diminished.

Acute Metritis.—This is rare in the unimpregnated state, and the parenchyma of the organ is its usual seat. The married are chiefly, but not exclusively, prone to it, and, in all, it is especially liable to occur about the period of the catamenial decline. Very severe pain, deep behind the pubis, is a prominent symptom, which is much aggravated by the movement impressed upon the cervix in the evacuation of the bladder and rectum. The treatment is obvious as soon as the nature of the disease can be recognized.

" *Chronic Metritis* is an exceedingly frequent disease, often affecting the whole organ, but more commonly confined to the cervix. Sometimes it follows active inflammation, but more usually it comes on slowly, and independently of an acute attack. There is nothing in which knowledge and accuracy are more necessary, than in the diagnosis of the conditions, and especially of the induration induced by this insidious affection. It may be regarded as the neutral ground of organic uterine disease. To know that the alterations in the cervix are still of a simple kind, after inflammation protracted through many months, or even a longer period, to feel certain that a favourable prognosis may be justly given, require close and extended observation. But I am certain that, for a much

longer period than is generally supposed, a cure may be fully anticipated; and every day's experience convinces me, that assiduous treatment would accomplish far more than many practitioners venture even to hope, much less confidently to expect." * * * * *

"Still, there can be no doubt that change of organization takes place and that conversion into real uterine schirrhus is the occasional result of insidious chronic inflammation. Such a fact should be an incentive to watchful and persevering treatment." 366.

The affection is accompanied by much pelvic uneasiness and discharges of varying appearance.

"It is after the persistence of these symptoms for some weeks or months, that the sallow countenance, the impaired appetite and digestion, abdominal pain, slight emaciation, and a gradual loss of strength, excite apprehension and an examination being solicited, is generally readily granted. The uterus is almost invariably enlarged, and often considerably indurated, and, on balancing it on the finger, its increased weight is evident. The cervix, from infiltration of lymph, is frequently hypertrophied; its mucous follicles, being filled with fibrous effusion, are prominent, and project unduly beyond the surface.

"This peculiarly elevated state of the uterine mucous follicles, has been denominated the *granular* inflammation of the cervix, a term also used, when the mucous surface of the neck is studded with the effused lymph, in the form of red or highly-coloured granulations, instead of its being infiltrated into the follicles or crypts. The cervix is more bulky and doughy in feel, and the os is found to be softer, more widely open than natural, and often, in some part of the aperture, there is tenderness or pain, with a roughness amounting almost to abrasion." 367.

In the *treatment* of this affection, topical depletion, the hip-bath, mild laxatives, entire rest, pure air, and a regulated diet, are the means called for. Iodine, mercury, conium, &c. will exert no beneficial effect in diminishing the induration and enlargement until the existing inflammation has by such a plan of treatment become alleviated. The effect of depletion in increasing the power of the absorbents, by removing existing inflammation, is known to every practitioner.

CANCER OF THE WOMB.

1st. *The Incipient Stage.*—The author commences this chapter with the all-important question—"*Whether prevention of further mischief, presuming the disease to be in its incipient stage, or a cure of that which already exists, may be reasonably hoped for?*" It is cheering to find that a still farther extended experience, since he published his paper in the Guy's Hospital Reports, 1836, leads him to reply to this in the affirmative, while the subsequently published researches of Duparcque and Montgomery, tend to the corroboration of the statement. The passage which he quotes from the Reports contains the pith of his conclusions.

"'That hard tumours of the cervix, and indurated puckerings of the os, (conditions which frequently terminate in ulceration) may be melted down and cured by the topical application of iodine, aided by the recumbent posture, abstinence from sexual intercourse, cupping on the loins, a mild, unstimulating, and often

a milk diet, gentle aperients, narcotic injections into the vagina, and the almost daily use of the warm hip-bath.'

"It has been doubted whether I have sufficiently defined the nature of these hard tumours; whether, in fact, they are to be regarded as cancerous, or merely as congestions and ulcerations, which, not being malignant, are capable of cure. I believed, at the time I wrote these observations, and I still adhere to the opinion, that they were malignant tumors; but that their full development was prevented, at this early period, by the treatment pursued; for I have long been convinced, that cancer of the womb may be arrested, in its early stages, by the removal of the pathological state, of which it is the consequence." 370.

The author, in corroboration of the possibility of relieving the early stage of cancer, quotes from the admirable paper by Dr. Montgomery, which appeared in the Dublin Journal, January, 1842, and extracts from which were given in the Medico-Chirurgical Review, for the following quarter. Such cases are not to be confounded with others, in which the cancer may become quiescent for a time, still retaining all its malignancy, yet to be developed.

"I am aware it may be urged against the reality of the cure, or the arrest of the malady; that the incipient stage of cancer is occasionally protracted to several years, even where treatment is entirely neglected; but this can scarcely impugn the value of the measures now urged, as during any portion of the time the disease is thus inactive and stationary, it remains without diminution. But it is not so where powerful and persevering treatment is in efficient operation, in such cases, the disease is retrograding; the congestion, puckering, and induration, and the morbid state of the mucous lining are gradually and perceptibly lessening, facts satisfactorily proved by repeated examinations with the finger and with the speculum." 375.

The progress of cancer is very diversified, in all its stages, in different subjects. The author has observed it to be slowest in dark complexions, and most rapid in the fair and ruddy, whose capillary circulation is most active. Severe illness of any kind, or mental distress, frequently accelerates it.

Early Symptoms.—These, in connexion with the opinion or the curability of the early stages, are of the last importance. Pains, often of a severe character, about the back and pubes, and sometimes in the course of the sciatic nerve, at first transient, become persistent, and attract forcibly the patient's notice. Irregular menstruation, and vaginal discharges are not usually found in the early stages but pain in sexual intercourse is so sometimes. Accurate knowledge is alone to be obtained by an examination. Three kinds of induration may be found.

"1. The rima, or circumference of the uterine aperture, may be wholly, or only partially, hardened and puckered.

"2. The cervix may be hard throughout its whole structure.

"3. Hard tumours may be deposited in any part of it.

"I am quite aware that tact, and a somewhat extensive knowledge of the normal or healthy varieties of these parts, are necessary for accurate diagnosis. The practitioner, therefore, will do well to remember, that independently of disease, there may be—1. A large and firm cervix. 2. A capacious, patulous, and firm os. 3. An os fissured, and unequally hard." 377.

Predisposing Causes.—The disease is frequently hereditary. Although not often a disease of the young. Dr. Ashwell has seen it below 20, Carmichael at 21; Wigaud at 14. Boivin and Duges, out of 409 cases, found it existing, in 12 under 20: in 83 between 30 and 40; in 106 between 40 and 45; and in 95 between 45 and 50. From 30 to 55 are however the years when women are especially liable. Married women are more prone than single, or even than widows, and distress of mind would seem to exert a great predisposing effect.

Exciting Causes, such a blows, falls, undue pressure, violence done in parturition, or sexual intercourse, &c., may undoubtelly induce the disease, by bringing a pre-existing disposition into activity; but while in some cases these causes occurring in an aggravated degree have yet produced mere simple induration, cases of confirmed cancer come on at other times, unpreceded by any of them.

Pathology.—Respecting the hypothesis of the concerous vitiation of the blood, advocated by so many able pathologists, the author observes:—

"There is no doubt that carcinomatous and encephaloid matter has been found in the interior both of veins and arteries. I cannot, however, after a careful perusal of all the reported cases of this kind, discover any proofs that these cancerous products existed in the blood or its vessels alone; in other words, independently of, or previously to, the development of the disease in the tissue of the solids. Dr. Carswell does, nothwithstanding, affirm, that the blood is the sole primary seat, and that he has seen cases, where the venous blood alone was contaminated by the disease. Such instances have not fallen within my own observation; and certainly, till the statement is supported by the fullest and most accurate records of the examples themselves, it will fail to command extensive assent. * * * From all which has yet been observed and settled as true, it may, I think, be assumed, that the most frequent primary locality of cancer is not in the blood, but in the molecular structure of organized tissues or parenchymata, and that the deposit of the morbid material is dependent on perverted nutrition and secretion." 381.

Diagnosis.—"Simple engorgement, hypertrophy, and induration, are less hard, of more uniform surface, often unnaturally warm, and tender on pressure, whatever part may be affected; while, even in the early stages of cancer, the surface is irregular and rough, free from tenderness; and there is often a weight, coldness and stony induration.

"In cancer, and the simpler affections already mentioned, there is a marked difference in the mucous membrane, covering the cervix. In the former it is of a dull white, or slightly grey colour: in the latter, it is much redder and more vascular, and often morbidly sensitive." 382.

Prognosis and Duration.—The prognosis to be delivered will depend much upon the stage at which the disease is seen. But seeing the possibility of curability in the early stages, and of prolonging life even in the latter ones, the practitioner will be cautious in not prostrating the energies of his patient by precipitately announcing the hopelessness of her case. The mean duration of cancer is not yet determined, and the period of twenty months, mentioned by Lever, is correct only if it embraces merely the second or ulcerative stage. The final termination is sometimes

very sudden and unexpected, the possibility of which must be borne in mind, but not confounded with temporary failure of strength, capable of being relieved by tonic medicines.

Prophylactic and Curative Means.—Before entering upon these, the author states the precise condition of parts which will admit of their application.

"The muciparous glands, in the interior of the cervix, may be hard, and of the size of small shot, and pressure on them may induce pain, and yet, if the mucous membrane covering them be not ulcerated, a restoration to a healthy state may, by proper treatment, be fairly hoped for. I am aware that, in a slight degree, such a state of the muciparous glands may occasionally exist, as the result of irritation, induced by various causes, as painful and excessive intercourse, dysmenorrhœa, &c.; but the effect is then generally transient, and unaccompanied by the more permanent symptoms already mentioned. These little indurated glands are often associated with a hard and fissured state of the os, and an enlarged and hard cervix. The turgescence of the interior of the neck, and its deep flesh-colour, both within and externally, are well-marked. The uterus is usually increased in bulk, and feels altogether thicker and more solid.

"If the vagina is at all knotted and indurated; if the cervix is united to the vagina by hardened mucous membrane, and cannot be moved freely; if the uterus generally is fixed and consolidated with the neighbouring organs, or if there be abrasion, softening, or commencing ulceration; then the case wears a very unfavourable, but not entirely hopeless, aspect, and a most cautious prognosis must be given." 386.

General Remedies.—Complete repose on a sofa, and an entire abstraction from considerable physical or mental exertion, and from sexual intercourse—a simple unstimulating (some have been benefited by abstinence) diet, must be insisted upon. Dr. Ashwell approves of the practice of Montgomery, of bringing the system slightly under the influence of mercury, combining it with iodine and anodynes: but it is only in the earliest stages of the affection, and in the absence of any contra-indication to its use, that this drug is admissible. Although the various medicines, such as conium, belladonna, stramonium, &c., are to be rejected as possessing any specific effect on cancer, they may be employed as mere anodynes. Other medicines of a chalybeate character are often useful, and the author particularly recommends the *iodide of iron.* He has also derived much benefit from the conjoined external and internal use of the *sesqui-oxide of iron.*

"Almost any of the preparations of this invaluable remedy may be either dissolved or made into a paste with water, and topically applied. Collating the opinions of others resting on cases, with the facts observed by myself, I am convinced that mercury and iodine, aided by iron and the horizontal posture, are the best general remedies."

Local Remedies.—It is upon these the author chiefly relies. *Depletion* must be performed either by cupping or leeching the perineum, vulva, or cervix, or scarifying the latter—the quantity of blood taken being sufficient to relieve the state of congestion, without inducing prostration. Dr. Ashwell usually applies from three to eight leeches to the cervix, once every seven or ten days. They form a useful preparative for the iodine.

Warm *hip-baths* are of great utility, the patient remaining immersed for upwards of an hour, night and morning, the access of the water to the organs being facilitated by using a perforated speculum, which she soon learns to introduce. Most patients receive great exemption of pain and procural of rest from the baths, but some find their sufferings only increased by them, when they must be discontinued. These means are only of perceptible service, after long perseverance in their employment: and we must be content if we find we can even prevent the disease from making advances, while the greatest encouragement is derived from very slight improvement. It is only after their employment we may venture upon counter-irritation, the use of iodine, nitrate of silver, &c.

"*Iodine.*—So far as my experience has gone, the external application of this drug to the cervix is sufficient to secure its beneficial effects, especially when the friction is persevered in for ten or twelve minutes. Many patients apply it by the finger, others employ a camel-hair pencil, or sponge, mounted on a slender piece of cane. The ointment I use is the following. ℞. Iodin. pur. gr. xv., Potassa hydriod. ʒij., Ung. cetac. ℥jss. M. ft. Ung. A portion, about the size of a small nutmeg, is to be introduced into the vagina, and rubbed into the affected cervix every night. The average time in which I have seen resolution of the induration accomplished, varies from 8 to 10, to 16 or 20 weeks; this event greatly depending upon the diligence and susceptibility of the patient. It may, however, be remarked, that while there are many individuals incapable of receiving the impression of mercury, there are few on whom iodine will not exert its accustomed influence." 392.

When it causes sickness, excitement, or irritability, it may be suspended for a week or two, during which, magnesian aperients, tonics, and nutritious diet should be given.

"*Nitrate of Silver.*—I have found this caustic most useful where the mucous tissue, lining the channel of the cervix, or around the margin of the os, has been red and tender, or where there have been obvious or slight ulcerations, or a tendency to softening. The character of the mucous membrane has generally improved after three or four applications; and, in a case I am now attending, the very unhealthy surface of an indurated cervix, and its attendant and excessive leucorrhœa, have been cured by its employment. It must be repeatedly used where there is fear of ulceration, or where, from the fetor of the discharges, and the increased pain and unhealthy aspect of the surface, the disease seems likely to make rapid progress. Severe pain is not often complained of, even when the solid nitrate is rubbed over the part. Frequently, however, where the patient has suffered pain before, the nitrate has entirely removed it, and I can speak most confidently of the advantage of repeatedly obtaining a new surface from its use. The following is a sufficiently strong lotion. Arg. nit. gr. 30 ad 40, Aq. distill. ʒiv. M.

"It is scarcely necessary to observe, that the speculum must be introduced, in order to apply topical remedies with the exactness which they require." 393.

2*nd. The Advanced Stage.*—The author protests against our abandoning even these desperate cases, for we may do much to protract life and mitigate suffering. When ulceration is decidedly established, examinations are both painful and unnecessary, but prior to this they are required, or we may mistake some of the early symptoms for those attendant upon an advanced degree of the malady which really does not exist. The amount of suffering to be relieved varies in different cases, and at most we can only offer palliatives.

The *discharges* vary much in appearance, abundance, and fetor, and their

temporary cessation often furnishes the patient with illusive hopes of amendment. As long as these are not excessive in quantity, mere tepid or cold water injections suffice. At other times those of an emollient, slightly stimulant, or astringent character are required. Whentheir prolonged use does not seem to be attended with benefit or even produces pain, they must be discontinued, as also when they produce hæmorrhage. The nitrate of silver (gr. x. ad xx. to oz.) or the sulphate iron (3j. to pint) are often useful; but in the most advanced stages we are obliged to be content with mere tepid water containing a little spirit, and the chloride of lime as a corrector of the fetor. *Hæmorrhage* sooner or later comes on in almost every case, and sometimes to an extent rendering it wonderful how the patient should ever rally. The usual local means of restraining it must be had recourse to, but are often without avail. The *pain*, in some cases of even extensive ulceration, is by no means severe, while, in others, nothing can surpass its torments; and, indeed, it has sometimes terminated life at once, by inducing convulsions or other cerebral disorder. The author, although at first not rejecting the milder anodynes, relies eventually almost entirely upon *laudanum*, which disorders less than the preparations of morphia after long use. He begins with as small a dose as possible, and suspends it when practicable. He finds its efficacy increased, and its liability to disagree diminished by adding to each tea-spoonful of the tra-opii a tablespoonful of sp. lavand. c. and of brandy.

In reference to *Excision of the Cervix Uteri*, Dr. Ashwell considers, that our improved modes of examination, and knowledge of the diseases of this part, will enable the revival of the operation to be followed by greater success, than that which formerly attended it. How seldom cases will be found, to which it can be properly applied, may be judged of from the fact, that the author, so alive to the necessity of early examination in suspected cases, and so practised in conducting it, has for years been in vain seeking for a case, in which he could recommend its performance. He justly supposes that many of Lisfranc's cases of excision were performed when no cancer existed; while the testimony of his assistant, M. Pauly, proves the disgraceful falsification of the results this able, but unprincipled, surgeon was guilty of.

The *removal of the entire uterus* has been performed in cancer, both here and on the Continent; but skilfully as the operation may have been conducted by Blundell, we hope never to hear of its having been repeated.

Simple Ulceration of the Cervix and Os Uteri.

As there may be induration so may there be ulceration, independent of malignancy; undetected it no doubt frequently heals without any remedy, and, when left to itself does not degenerate into a malignant sore. Slight syphilitic sores, abrasion produced by excessive intercourse, instrumental delivery, abscess, &c. are not uncommon. The long-continued suffering and discharges sometimes existing *after coition* doubtless often result from this cause, but this frequently cannot for long be ascertained, owing to the delicacy which raises objections to the employment of the speculum. When inspection is permitted the appearances are various.

"1. Sometimes they are mere erosions of the mucous surface, redder than the sound membrane around, and the edges sharp and well defined. Such are not unfrequently seen after acrimonious leucorrhœa, the consequence of high living and excessive sexual indulgence. 2. The ulcers of the cervix are occasionally numerous, varying in size from a small pea to a sixpence or shilling, the larger ones being evidently formed by a coalition of the smaller; and long neglect may have induced roughness of surface and greater depth; and the colour may be a darker red. In such sores there is commonly pain on pressure, and the speculum causes bleeding. The discharge, too, may be sanguineous, and of a yellow or dirty-white colour, but usually, when there is no want of cleanliness, without fetor. 3. There is an ulceration following protracted local irritation from pessaries, sponges, and *contrivances to prevent conception*, in which the cervix is enlarged and spongy, with increased heat and great tenderness on pressure, and an open state of the os. In such cases bleeding frequently occurs.

"Every remark now made may be verified in simple ulceration, attendant on entire procidence of the womb. We all know the varying extent and depth of such ulcers, and how extremely difficult they are to heal. I believe, that partial inflammation of the cervix, resulting in simple ulceration, is by no means uncommon; an opinion which will become confirmed by the greater prevalence now than formerly, of examinations by the speculum. I am not aware that temperament has much, if any, influence; but I have rarely, if ever, seen the cervix ulcerated prior to natural or vicious sexual intercourse. Prostitutes, as might be expected, are obnoxious to it." 429.

Much unhappiness in married life, great pain in intercourse, sterility, and eventually broken health, arise from these cases not being sufficiently understood; and either the practitioner not urging, or the patient not consenting to, the indispensable inspection of the part.

If the patient be seen very early, ulceration, though not actually existing, may be imminent, and scarification, the application of leeches, or even venesection required. At all events, complete rest and hip-baths are essential, as also are mild aperients, sexual abstinence, and a spare diet. Mild injections (*e. g.* ox. zinc. 3iij.—iv. ad ℥vi. aq.) used three or four times a day, will often cure. Mercurial and other ointments may be tried. The application of the *nitrate of silver* is highly beneficial.

CORRODING ULCER OF THE UTERUS.

First described by Dr. John Clarke, this is a rare disease; for while we see one case of it we may see 90 or 100 of cancer. It is less painful and of slower progress. Examined by the speculum, when its diagnosis becomes easy, it much resembles lupus of external parts. There is no accompanying induration or immoveability, and defined by an accurate line of demarkation, the uterus beyond this is found healthy in structure. Nitrate of silver, if applied early, may perhaps arrest its progress in some degree.

CAULIFLOWER EXCRESCENCE OF THE UTERUS.

This, although a commoner disease than the last, is infinitely more rare than cancer, and differs from both in the absence of pain—attention being

chiefly directed to it by the abundant quantity of attendant watery discharge. The exhausting effects of this and subsequent hæmorrhages at last wear the patient out, usually in two or three years, but sometimes not until a very protracted period. The malady does not extend beyond the cervix, or invade other parts, but when removed is always reproduced. Still, life may sometimes be prolonged by the operation for several years, but how far this is the case will much depend upon the perseverance of the patient in quietude, a careful diet, the use of injections, &c.; for, in most cases, not above a year or two elapses before the fungus re-appears.

Occlusion and Rigidity of the Cervix Uteri.

The object of this chapter is to enforce the preferability of incision over any other means of overcoming the obstacle. In reference to *occlusion*, the author says—

"That incision is the safest remedy, where the os is in a state of firm and complete closure; or, in other words, where the uterus, so far as its lower orifice is concerned, is imperforate."

In some women this orifice is very minute normally, a mere chink or small circular aperture existing; and in such cases, a very insignificant amount of local inflammation, after conception, may produce complete occlusion. The condition of the parts, unattended with induration, may be quite natural in all other respects. In such cases very injurious delay sometimes takes place under the fallacious idea, that a mere obliquity of the os is present, to be righted by the parturient efforts, or that the occlusion, when allowed to be present, may be overcome by the efforts of Nature and depletion. Dr. Ashwell has met with no case of serious protraction caused by obliquity, and if, after some hours' active labour, no os be discovered, delay on this ground will be unjustifiable. Fatal results have followed by delaying interference until collapse, or rupture of the uterus, have occurred. Even the prior employment of bleeding must be cautiously recommended, for, in many cases, it will only enfeeble the powers of the patient. If the practitioner has determined an occlusion of the os to exist, he must not delay giving the necessary relief; and he can accomplish this much more effectually and safely by careful *incision*, than by forcing the female catheter, or other blunt instrument, through the obstruction—impracticable indeed as he would find it to do this in many cases, and dangerous in all, by reason of the increased liability to rent and contusion of the uterus. A mere membranous obstruction would alone justify such means.

As to *Rigidity*—

"That in examples of such extreme rigidity of the os, when, after hours of strong uterine effort, the power of dilatation is entirely absent, whether such rigidity arise from disease in the structural organization of the part, or has resulted from previous laceration and ulceration, incision is the best and safest treatment; far preferable to protracted and powerful dilatation of the os by the finger; or, on the principle of non-interference, to leaving the case to the natural efforts."

Without wishing to recommend having a too precipitate recourse to the knife, the author is convinced that many fatal results are due to hav-

ing delayed this too long. The precise moment when we should cease to place any reliance on bleeding, antimony, fomentations, &c. is not, certainly, so easily determined, as in the case of occlusion; but, much more danger is to be apprehended, from the too long delay, than from the too early resort to the operation. Dilatation with the finger cannot be performed with the same impunity, as where there has been no structural or local malady producing the rigidity; and the case is in no-wise analogous to that in which we dilate a healthy os, for the arrest of hæmorrhage. "Where the cervix is rigid, contracted, and diseased, and the os so small as scarcely to be recognized, powerful, and long continued, artificial dilatation must be a dangerous remedy. It is scarcely to be expected that it should relax the parts, and lead to dilatation; it is much more likely that it should irritate, and thus induce inflammation, gangrene, and death."

Incision, even, is not always so simple a matter as it would seem at first.

"The simplest, perhaps of the examples of rigid os uteri, is where a very contracted orifice is surrounded by a structure almost entirely undilatable. In such a case, although there may be little indication of organic change, still, if there be a total absence of the power of dilatation after the use of free venesection and antimony—time having been allowed for their beneficial effects—such a case cannot be trusted long with safety, either to the natural efforts or artificial dilatation. Other examples are not so simple as this. Many, probably the majority, are the consequence of some previous morbid occurrence. The os and cervix may have been injured in a former labour; abscesses, ulcerated surfaces, and cicatrizations may have taken place; thus, the uterine orifice may have become nearly, if not entirely, closed; and the relative situation of the bladder, urethra and vagina, so altered, as to render the division of parts much more hazardous and difficult; or it may be that a hard tumour, or a more malignant and active deposit, has imbedded itself in these parts, totally altering the os and the natural structure of the cervix." 452.

We have, however, no choice. Artificial dilatation is inefficient, or, if powerful, dangerous; delay is death. Incision, when performed in proper time, is safe and effective, and causes very little pain. In one of the cases detailed, the patient submitted, with good effect to the operation, in four successive pregnancies.

"The safety of incision consists in its preventing unlimited and extensive laceration. So long as division by the knife, and the subsequent tearing of the parts, is confined to the os and cervix, and does not extend beyond the reflection of the mucous surface of the vagina over these parts, recovery is almost certain; whereas, if the parts be left to rupture of themselves, the body and fundus of the uterus, and their peritoneal investment, are pretty sure to be implicated, and the result will then most probably be fatal." 468.

In concluding a careful analysis of this volume, we must express the great satisfaction we have derived from its perusal; and urge its purchase upon those who wish to be in possession of a really valuable work. Each division of the subject is illustrated by a well chosen selection of cases, which being printed in a smaller type, while they much increase the value of the work, do not proportionally augment its size or price. Works of

any magnitude, are much better issued in parts, their purchase being thus rendered more convenient; but both authors and publishers should make it a point of honour, as they would find it one of profit, that these should appear punctually at the periods promised. The paging of the present work being continuous, the three parts may be bound in one volume.

Medical History of the Expedition to the Niger, during the Years 1841-2. Comprising an Account of the Fever which led to its abrupt termination. By *James Ormiston M'William*, M.D. Surgeon of the Albert, &c. 8vo. pp. 287. Churchill, 1843.

Who has not heard of the ill-fated expedition to the Niger? It is curious that deaths and disasters, on a small scale, make a more vivid and distinct impression on our minds, and excite more acutely our sympathies, than wholesale slaughters and the destruction of whole fleets and armies. The shipwreck and sufferings of Byron and his little crew will be read and remembered, when the battle of Borrodino—perhaps even of Waterloo, will be forgotten! We can form a distinct idea of the personal misfortunes, privations, and hardships of an individual, or of a boat's crew—but the destruction of Napoleon's army, in the retreat from Moscow, overwhelms us with astonishment, and leaves no accurate picture on the mind's eye. On the other hand, we can easily conceive a dozen men groaning in fever, under a tropical sun, and between the decks of a small vessel, while one solitary man is left for duty—and he steering the vessel and attending to the engine without the assistance of a single hand!

The medical portion of the volume—the account of the fever—is a very small one—and we dare not indulge in giving much of the mere nautical narrative, which, though interesting to the public at large, is not adapted for a medical journal.

Every one knows that the extinction of the slave-trade was the benevolent purpose for which this unfortunate expedition was projected, besides the still greater object—the spread of Christianity among the natives of Africa. Three steam vessels, the Albert, the Wilberforce, and Soudan, were fitted out with every possible attention to the health, the comfort, we had almost said, the luxury of the officers and crews. Divines, Medici, Geologists, Mineralogists, Botanists, Astronomers, &c., were liberally supplied—as well as a profusion of medical stores and culinary preparations. The crews of the three vessels consisted of 178 men, of which there were 53 officers, inclusive of civilians and engineers—67 white, and 28 coloured seamen. We must pass over thev oyage outwards, as it does not present anything particularly interesting. The expedition entered the Mouth of the Niger on the 13th of August, 1841, and two days afterwards, a German died of fever, with delirium and tremors, but not supposed to be of an endem ic character. A considerable part of the narrative is occupied with

the nautical difficulties attendant on the ascent of the river, and with descriptive sketches of the topography and population on both banks of that pestilential stream. These we must pass over. They had passed the great Delta of the Niger, and were preparing to explore the valley of that river, without any symptoms of illness, when, on the 4th of September, (1841), a fever of the most malignant nature broke out in the Albert, and almost simultaneously in the other vessels—not abating till the whole expedition was entirely paralyzed! Between the 12th and 17th of September, the sickness still increasing, the model farm was established at Stirling Hill, and it was now evident that some decisive step must be taken. One vessel, therefore, the Soudan, was selected to descend to the open sea, and on to Fernando Po, with all the sick. She did so on the 19th September—but it was soon found necessary to despatch the Wilberforce in the same direction, leaving the Albert to prosecute the voyage farther up the river.

The settlement of the now famous MODEL FARM, at the confluence of the Niger and Tchadda rivers, includes a tract of land 16 miles by 5 in extent. Stirling Hill is two hundred feet above the level of the river, and near it rises Mount PATTEH, to the height of 1160 feet.

Having located the settlers, the Albert, sadly reduced in the number of her officers and men, but full of hope, started on her ascent of the river, with the view of reaching Rabba; but on the third day, (22nd Sept.) three officers, including the captain, were laid up with the fever—and three others, in the course of the evening, were added to the list. By the 3rd of October, there were only one white seaman, one sergeant and one private marine—Dr. Stanger, Mr. Willie, Mr. Huxley, and Dr. M'William, himself, capable of doing duty!? The season was advancing, the river beginning to fall, and under such circumstances, it would have been sheer madness to attempt a further prosecution of the expedition. On the 4th of October, therefore, the Albert weighed, and began to drop down the fatal river. Dr. Stanger undertook to manage the engine, while our author was necessitated to work the ship, in addition to his professional duties. In steaming downwards, they touched at Stirling Hill, and found the white part of the new settlers in a sad plight. They therefore reembarked all but the blacks, and continued their course towards the long-wished ocean. On the 16th October they fell in with the Soudan, at the entrance of the river, and both vessels proceeded to sea, bound for Fernando Po.

From this time, the expedition may have been considered at an end, though many of the officers and men fell victims after their departure from the pestiferous stream.

VITAL STATISTICS.

Of the total number of whites in the squadron, viz. 145, there were no less than 130 cases of fever, and 40 deaths! There were 158 blacks, of which none died, though eleven had fever. This speaks for itself.

THE FEVER.

There was little uniformity in the premonitory symptoms. A number of the patients had headaches—scintillations along the spine—and chilliness preceding the attack—others complained of debility, and some of burning sensation in the epigastrium. Then came giddiness, lassitude, tremor, foul tongue, small quick pulse, and general oppression. The eyes looked heavy—the pupils sluggish.

"*Character, course and duration of the symptoms.*—The accession was seldom accompanied by very marked shivering, yet previous to the period of vascular excitement, the patient usually experienced a sensation of coldness, and for the sake of warmth would fain have exposed himself to the rays of the sun. He would shortly express a wish to lie down, and would complain somewhat suddenly of increase of headache or giddiness, and intense heat of the skin, which had a dry parched feel, restlessness, intolerable nausea, and difficult breathing. The dyspnœa in several instances, particularly in my own case, was extremely distressing, and continued from one to four hours, until relieved by spontaneous vomiting, or the occurrence of diaphoresis. Headache was with some the prominent symptom during the hot stage, and the feeling was described as that of a cord being tightly girded round the temples. The thirst was very urgent: the tongue was foul in the centre, moist, clean or reddish, and invariably marked by indentations on the edges. The countenance was more or less flushed, the eye occasionally suffused and always looked wild. Pulse rapid but small, frequently feeble; thirst urgent, bowels constipated, and urine passed often and in small quantity. There was in general tenderness of the epigastrium, sometimes acute, but often not discoverable unless upon pressure.

"In some cases, coldness of the stomach was complained of some days before death. A subsidence of febrile action in general followed in from three to six hours, or at all events, the symptoms if continued beyond the latter period became much mitigated. Diaphoresis came on, the thirst moderated, and the signs of oppression in a great measure disappeared. The principal complaint at this period was from *the disagreeable odour of the perspiration, particularly in those cases that subsequently proved fatal.* I was not sensible of this peculiarity in the smell of the perspiration in my own case, but I perceived it very distinctly in several others. The sweating continued until from eight to twelve hours had been occupied by the whole paroxysm. The patient, although considerably exhausted, expressed himself as free from all trouble, and the countenance also indicated improvement. This seemingly favourable change did not last long, for the accession generally returned in from six to ten or twelve hours. Occasionally the respite extended to twenty-four hours. In a few cases, there was a treacherous interval of forty-eight hours, in the early period of the disease; but these invariably assumed afterwards a low malignant type. The fever in them seemed to have rested only to give strength for a fresh accession.

"The accessions did not seem to observe any law of periodicity. They came on, disappeared, and returned at all hours of the day and night. The evening, however, was a more common time of accession than any other; in which case, after the cold sensation had passed off, the paroxysm generally ran through its stages in the course of the night, and had suffered a considerable remission by the hour of breakfast (eight) the next morning.

"In a few instances the remissions were as complete as in the interval of ague. These were, however, only exceptions to the general rule, for total absence of fever was indeed of rare occurrence during the course of the disease." 134.

If no material improvement took place by the eighth or ninth day, the

prognosis was gloomy—the fever then assuming a low asthenic form. Local pain was seldom complained of—and, in several cases, the patients never made any complaint at all!

In favourable terminations, the remissions became more distinct, and the intervals more marked and lengthened—the countenance assuming a more natural expression—the skin more moist—the thirst diminished—and the pulse softer. At this period, diarrhœa was by no means uncommon—and also a copious diuresis, with a desire for food. Of the contingent symptoms the most prominent were delirium, yellowness of skin, and convulsions of various parts of the body. In no case was there "*black vomit.*"

PATHOLOGY.

The following were the appearances in eight cases examined on board the Albert.

"*Head.*—In two cases where the head was examined, softening was found in the corpus callosum and walls of the ventricles. In one case there was a small quantity of serous fluid in the base of the brain, and an unusual proportion in the ventricles. The dura mater was always sound. The pia mater in one case red and injected. No subarachnoid effusion was observed.

"*Thorax.*—The contents of the thorax were in nearly all cases healthy in appearance. Adhesions between the costal and pulmonary pleuræ were found in one instance with tubercular deposits in the lungs in the state of induration. In another, a cartilaginous state of the tricuspid valves, with serous effusion in the left pleural sac.

"*Abdomen.*—The peritoneum and its processes, as well as the surface of the intestinal tube, had in general a bilious tinge.

"*The Stomach.*—In several cases the stomach contained from one to five ounces of yellowish green fluid. The mucous coat was invariably softened, whether this fluid were present or not. In three cases livid patches were variously distributed over the inner surface of the stomach, becoming more distinct when the mucous tunic was scraped off, exhibiting stelliform nuclei in their centres. In two cases, the livid marks were arranged in the form of parallel streaks. These pathological appearances were chiefly in the splenic extremity of the stomach and near the pylorus. In one case there was remarkable venous arborescence on the exterior of the stomach, attended with general engorgement of the portal system. Small points of ulceration were observed in three cases, and slight thickening of the mucous lining in one instance only.

"*Duodenum.*—The lesions observed in the duodenum were of the same nature as those in the stomach, but much less marked. In one case the lower portion of this gut contained a yellowish secretion, of the consistence of mucus.

"*The Jejunum* was free from disease, and likewise the ileum, until within three feet of its lower end, where were observed, softening of the mucous lining generally and livid spots. A series of small ulcerations were seen in four cases. In one, the membrane was thickened, rough, and the ulcerations had nearly perforated the bowel; this case proved fatal by terminating in dysentery. The agminated glands of Peyer were distinct and enlarged in three cases.

"*Colon.*—The colon was usually nearly empty. On these occasions a dark, bilious, pultaceous matter was found in this portion of the tube, but in small quantity only: it was viscid and tenacious, adhering to the mucous tunic: where lividity or ulcerated points were found at the lower end of the ileum, the same lesions were seen to exist on the arch of the colon. Softening of the mucous coat was remarkable in three cases. In that of the case of dysentery already men-

tioned, there was softening of the tunic where is was not ulcerated, and induration and elevation round the edges of the ulcerated patches.

"*Liver.*—The liver was congested in one instance; larger than usual in two cases. It was anemious in two cases where the patients died early, and on two other occasions when death took place long subsequent to febrile action. In the latter cases this organ was of a pale gray colour, and had a dry appearance on being sliced. This condition was not confined to one lobe.

"*Gall-bladder.*—The gall-bladder was distended with bile of the colour and consistence of tar in three cases; one of which was fatal on the third, one on the seventh, and the other on the ninth day. In another instance the gall-bladder was nearly filled with bloody bile. The man in this case died suddenly, many weeks after the fever had left him.

"The enlarged condition of Peyer's glands, which is regarded by Chomel and Louis as constant in the typhoid fever of France, occurred in three cases out of eight that were examined. In four cases, the subjects of which with one exception died early, slight ulcerations of the gastro-enteric mucous membrane were observed. This fact is worthy of attention, inasmuch as it would seem to imply that the cause of the river fever, in whichever way it is introduced into the system, induces an unhealthy action in mucous surfaces much more rapidly than even the low typhoid fevers of France. Chomel does not consider that ulcerations take place in typhoid fevers earlier than the twentieth day, when there is, also, softening of the mucous membrane around the follicles, or in that part of it which covers them. Louis found the patches of Peyer natural in twenty autopsies, made by himself, of yellow-fever cases at Gibraltar, during the epidemic of 1828.

"*Spleen.*—In one case the spleen was enlarged, soft, and breaking down under the fingers; in another enlarged, gorged with blood, but firm. This viscus was not altered from the normal condition in the other cases examined. The *pancreas* was not in any case otherwise than natural. The *kidneys* were mottled and larger than usual on one occasion. The *bladder* was in general collapsed. A case in which bloody urine was voided was not inspected.

"The morbid appearances observed in the intestines are very like those so often found in fatal cases of the typhoid fever of this country. This is not the place to recapitulate the evidence opposed to the doctrines of Broussais, regarding the nature of fever; but every day's experience tends to prove that the ulcerations and other lesions of the bowels are a specific effect of the fever poison, and not the cause of the fever itself." 147.

Morbid changes of this kind were found in the intestines *in all cases*—but none of these changes were constant—and therefore not essential to the fever. In two cases the blood was found in a fluid state after death.

The main sequence of the African fever was an irritability of the mucous membrane of the bowels, continuing for a long time after the fever disappeared, and, no doubt, dependent on lesions contracted during the fever. This intestinal irritability occasionally rises into enteritis, and is then, too often, fatal.

Hepatic disease not unfrequently followed the gastro-enteric affection, either by sympathy, contiguity or extension.

CAUSES.

The author has not been able to make any additions to what has long been known, or rather conjectured, respecting the etiology of remittent and intermittent fevers. That a certain something—the nature of which we know not—is emitted from marshy localities—is acknowledged by all,

as causing miasmal fevers, &c.— and that is the sum total of our knowledge ! ! The banks of the Niger offered no exception.

In respect to the latent period of the poison, our author remarks as follows :—

"When it is considered, as has been already noticed, that the vessels were constantly exposed to endemic influence, while they remained in the Niger, it is impossible to say at what time the miasmatous poison was first inhaled: but I hardly think that it was imbibed by any individual before we left the mouth of the river : if this were so, then fever may be said to have ensued on the sixteenth day* from the period of its earliest imbibition. Quarter-masters, seamen, and marines, whose duties were chiefly on deck, stokers in the engine-room, cooks, and in short men of various occupations and constitutionally dissimilar, were simultaneously affected with fever.

"Upon the whole, I am inclined to think that in those cases which appeared at Iddah the germs of the disease were contracted in the Delta. The stagnant state of the atmosphere, (relieved by occasional tornadoes,) and the causes of malaric exhalation being still abundant, and accumulated in the lower part of the atmosphere, from the want of a wholesome agitation, were favourable in its development at Iddah. Up to this point, the south-west breeze had always been felt during part of the twenty-four hours. The miasma in this state of condensation, so to speak, acted energetically upon men whose vital powers were already enfeebled, and who may have been for some time insensiby under its insidious influence.

"Moral causes came also into operation after leaving Iddah: many of those who were well were dispirited, and not a few, when taken ill, became speedily despondent.

"When out of the whole expedition there were only fifteen whites that were not attacked with fever in the Niger, it is scarcely possible to offer any opinion as to how far the susceptibility to this treacherous disease was influenced by temperament or idiosyncracy. Of the blacks, consisting of natives of various parts of Africa, including Kroomen, Americans, West Indians of African origin, and East Indians, to the number of 158, eleven only were affected by the fever in the river: they (the eleven) had all been in England, and for some years absent from their respective countries. The disease in them assumed a comparatively mild form, and in no case did it prove fatal; showing that the immunity from endemic disease in warm countries, which is enjoyed by the dark races, is to a certain extent destroyed by a temporary residence in another climate.

"The question as to whether contagion contributed to the spread of the disease on board of the ships may, in my opinion, be briefly disposed of. All were exposed to the same influences; and nearly all were attacked with fever. Two only of the four medical officers who died had been in attendance on fever patients. Dr. Pritchett, Mr. Thompson, Mr. Stirling, and Dr. Stanger, were among the few who escaped being seized with fever, although they were in constant intercourse with the sick; and I was the last person in the Albert laid down with fever. The nurses on board the Albert were among the latest taken ill, and one escaped altogether. No fact came under my observation affording the slightest evidence that the disease was communicable from one person to another.

"Does one attack of river fever afford any protection against a second ?

"My own experience, added to information obtained from many of my brother officers, and from Mr. King, the surgeon of the Ethiope, who has been more in

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* "The Quorra, M'Gregor Laird's vessel, entered the river on the 19th of October, and fever broke out twenty-one days afterwards, on the 11th of November."

the Niger than any other medical man, is wholly unfavourable to the opinion that one attack of river fever affords any immunity from a second. On the contrary, those who have once suffered from this treacherous disease seem particularly predisposed to it, if they again venture within malarious influence." 181.

At a prophylactic, Dr. M'W. thinks himself authorised to recommend the daily use of quinine with good diet, and a moderate allowance of wine.

TREATMENT OF THE FEVER.

This is a very unsatisfactory subject. The very best mode of treatment is to get out of the range of the *cause* as soon as possible—that is, to get out of the Niger into the open sea!—"Pessimum Ægro cœlum est, quod Ægrum facit."

General bleeding was not found to be successful in this fever. On the contrary, it was injurious. Local bleedings, as cupping the temples, were sometimes beneficial.

Blisters were often of great use.

Mercury.—In some of the Niger cases gentle ptyalism "certainly did good." In many cases "the full action of mercury *would* have been attended with danger." "Calomel combined with opium, and afterwards with quinine, appeared to me to be the best mode of exhibiting the remedy.

Purgatives.—The bowels were generally constipated, and required active purgatives, especially in the early stage.

"Calomel, jalap, and the bitartrate of potash were given at first, so as to cause free evacuations, which were in general dark or of a bilious character. After the bowels had been well emptied, castor oil and the milder aperients answered better than strong purges; which then indeed do much harm. Enemata were given with benefit, when epigastric tenderness or irritability of the stomach, rendered the administration of purgatives by the mouth inadmissible." 197.

Diaphoretics.—The best of these was the true James's powder, which kept up the action of the skin without producing nausea. Sometimes quinine was combined with it, and with good effect.

Quinine.—"In general when the tongue began to clean, and the other symptoms indicated that the functions were returning to their normal condition, quinine was given in large doses with great benefit. But it was not to this period alone that the use of this valuable remedy was restricted, for there were many cases in which, from the tendency to sinking from the very beginning, it was necessary to commence with quinine, wine, and light soups. In a disease like the Niger fever, so little amenable to treatment, no rule can be laid down for the exhibition of a particular remedy; but no medicine was found so efficacious as quinine in diminishing the severity of the paroxysms. In some of the more protracted cases, the red tinge over the sharp features would occasionally indicate that whatever power of reaction remained in the wasted system, was exerted to establish a feeble exacerbation, the exhaustion following which was often lessened by the liberal use of quinine.

"Brandy, wine, camphor, opium and ammonia were freely given when the pulse began to flag, and when the symptoms generally denoted depression of vital energy; and often with almost miraculous effect, as in Case XIII.

"Sponging the body with tepid water and vinegar, in general afforded relief, but I never could carry the cold affusion further than the application of large wet cloths to the head. The warm bath was not much used, and in those cases in which it was tried the benefit obtained was only temporary, the relaxation and exhaustion produced by it, contra-indicated its general use in a disease which was marked by debility and tendency to sinking; tenderness at the epigastrium was, however, often relieved by applying to it a japanned case filled with hot water, and concave so as to fit closely to the abdomen. A large oblong case of similar construction was advantageously applied to the feet during the low stage of the disease; and at earlier periods, when the nervous depression retarded the development of the stage of re-action, in which case the extremities often continued cold after the chest and abdomen had become quite hot." 199.

The foregoing general remarks are illustrated by numerous cases with their details; but to these we need not refer. A good many pages are dedicated to the economy of the vessels, as ventilation, provisions, medicines, &c. &c. as well as to meteorology, &c. which will prove very interesting to naval surgeons and naval officers whose destiny may lead them to the pestiferous shores of Africa—and especially into that fatal river, the Niger.

The volume is written with great modesty, and indicates, in every page, good sense, discernment, and both practical and scientific knowledge.

CATALOGUE OF THE PREPARATIONS ILLUSTRATIVE OF NORMAL, ABNORMAL, AND MORBID STRUCTURE, HUMAN AND COMPARATIVE, CONSTITUTING THE ANATOMICAL MUSEUM OF *George Langstaff*, &c. &c. London, Churchill. 1842.

IT was, we believe, old Dr. Gregory of Edinburg, who used so earnestly to impress on the minds of his pupils the vast importance of assiduously perusing Morgagni's celebrated work *De Sedibus et Causis Morborum* in the terms, *Nocturnâ versate manu, versate diurnâ*. The habit of connecting the morbid appearances found after death with the symptoms observed during life, and of placing them, as it were, in juxta-position, being the very best, nay in fact the only means of preparing and qualifying the medical practitioner for attaining and forming a correct diagnosis at the bed-side of his patient. To point out the value and importance of studying morbid structure and of tracing it through all its stages and gradations from the first blush of capillary redness to the final disorganization of parts, would at the present day be a work of supererogation. That the thing is fully recognized, the numerous Anatomical Museums of Morbid Structure throughout the metropolis evince. The opportunities of studying this important branch of pathology in London, containing as it does, the Hunterian Museum, that stupendous monument of human industry, together with the numerous other Museums attached to the

various hospitals, and contributed to by the hands of such men as Cooper, Brodie, Lawrence, &c. &c. are to be surpassed nowhere. The collection of the specimens of morbid structure, of which we now present the catalogue to the notice of our readers, was commenced some thirty years ago, at a time, says the author, when the study of morbid anatomy was but little practised, and almost every post-mortem examination offered subject of interesting and novel investigation. In forming his collection, Mr. Langstaff was assisted by several of his medical friends, to many of whom he here expresses his acknowledgments. The preparations are intended to illustrate not only morbid, but normal and abnormal structure. The arrangement is physiological—he commences with the Osseous System, and gives cases of some of the principal diseases of the bones. Then the Vascular System, under which he gives the Normal, Abnormal, and Morbid Anatomy of the Pericardium and Heart, and of the Arteries and Veins—then the Nervous System, including the *Brain* and *Spinal Cord*, with their membranes and the nerves. Next the *Organs of Respiration—Organs of Digestion—Urinary Organs*—the male and female generative organs. Then, under the head of Miscellaneous Preparations, we have two Chapters, containing the descriptions of some matters which should have come in before, but had escaped notice. Several specimens of *Comparative Anatomy* find a place in Mr. Langstaff's Catalogue.

We shall present our readers with some extracts from the most interesting parts of this work—and shall commence with the *Vascular* System, there being nothing very striking or novel in the Chapters descriptive of the Osseous System. In extracting the cases we shall retain the numbers affixed to the originals.

Malformation of the Heart.

282. In the heart of a boy eight years old the cavities were found to be very large, and the muscular structure very firm. Nearly three ounces of water found in the pericardium—foramen ovale open—valvula mitralis shortened and thickened; the Eustachian valve extensive and reticulated. The aorta and its vessels were very large; the sigmoid valves of this vessel and of the pulmonary artery thickened. From birth he had all the signs of hydrocephalus, with symptoms denoting malformation of the heart; his lips of a purple colour, skin rather cold; pulse full and irregular; these signs were attended with dyspnœa. He was attacked with pertussis, convulsions came on, and he expired in one of the paroxysms. The head was immensely large: the arachnoid membrane and pia mater were much thickened, and a milky fluid was effused between them; the vessels of the brain were surcharged with blood, and the structure of the cerebrum was very dense; the septum lucidum and fornix softened; four ounces of fluid in the lateral ventricles, and the third ventricle was filled with water which produced pressure on the optic nerves.

286. Here we have the heart of a boy ten years of age. From birth he had symptoms denoting malformation of the heart; he was a complete cæruleus; pulse generally very full and irregular. About a fortnight before death he had a severe attack of scarlatina; purpura hæmorrhagica nearly all over his body: this was followed by hodrothorax and ascites; in both sides of the chest there was a considerable quantity of serous

effusion—lungs œdematous and partly hepatised—four ounces of fluid in pericardium—heart remarkably large, and presented a very irregular appearance: its apex very obtuse.

The parietes of the left ventricle were thick, the cavity capacious, the mitral valve and lining of the auricle much thickened. At the superior and central part of the septum ventriculorum, there is an aperture about the size of a shilling, allowing a free communication between the ventricles. Two of the aortic valves adhere very firmly at their superior part—they are slightly thickened. The aorta is very large, as are also the coronary arteries—foramen ovale open—fossa ovalis deep—the ductus arteriosus closed—parietes of right ventricle thick—cavity large—the tricuspid valve and lining of the auricle thickened; pulmonary artery large.

This is a remarkable specimen of mal-formation of the heart—it is surprising the patient lived so long.

Morbid Anatomy of the Pericardium and Heart.

294. Here is a specimen displaying pericarditis. The patient, a gentleman 46 years of age, had lived intemperately. For several years he had been afflicted with symptoms denoting a diseased liver; about twelve months previous to his death he was troubled with a dry cough; dyspnœa, and symptoms of organic disease of the heart supervened, which gradually increased in violence—he died of effusion into the chest. The liver was found to be enormously large, of a deep yellow colour—the gall-bladder was much distended with viscid bile—spleen very large and extremely soft. In the right side of the chest were found three pints of sanious fluid—the lobes of the lung were firmly agglutinated by organized lymph, and much flattened—the pleura costalis thickly coated with lymph.—The lung on the left side healthy—four ounces of yellowish fluid in the pericardium—its internal surface and that reflected over the heart highly inflamed, and lymph deposited which was organized; firm adhesions had been effected, more especially on the left side of the heart near the auricle and the root of the pulmonary artery—the left auricle and ventricle very capacious, the parietes of the latter rather thin—mitral valve normal, except a few opaque spots near its origin—the right side of the heart normal. This our author very justly pronounces to be a very valuable preparation—we think its value would have been enhanced considerably, had the history of the case been given more fully—one circumstance struck us as rather strange, viz. the thinness of the parietes of the left ventricle—from the pericardial adhesions found on the left side of the heart, one would have expected thickening of the parietes of this ventricle. We have no symptoms which can at all account for, or at least which can be at all referred to, the inflammatory appearances found in the lungs.

In 297 we have another instance of disease of the pericardium and of the heart itself, in a man 45 years old, and of intemperate habits, who, for several years before any appearance of heart disease, suffered from an affection of the liver. The symptoms of organic disease of the heart came on gradually, at length became exceedingly severe, and caused hydrothorax. The pulsation of the heart was violent and extensive, and generally irregular; there was also distressing dyspnœa, great anxiety and irritability, with a bluish suffused countenance. A considerable quantity

of water was found on each side of the chest. The pericardium adhered very firmly to the reflected portion by lymph, which was in great quantity, and organized—the right auricle very capacious, and its internal surface inflamed—ventricle healthy. The left auricle large—its internal lining inflamed and partly ulcerated—the mitral valve very much thickened—ventricle immensely capacious, the parietes natural.

An immense quantity of water in the abdomen; liver very large.

299. Here we have the heart affected with chronic pericarditis according to our author's mode of stating the case. The patient, 19 years of age, tall, delicately formed, had for nearly four years evinced signs of phthisis pulmonalis. About six months previous to his death, symptoms of pneumonia came on, accompanied with great difficulty in breathing; these symptoms gradually increased, and he was occasionally attacked with syncope. Soon after this period the heart became affected—he was annoyed with violent palpitation. The expectoration was muco-purulent, but never profuse; hectic fever supervened; but, what is very singular in this case, the emaciation of the body was not so great as we generally notice, where phthisis has run through its different stages.

About a fortnight previous to his death, the mucous surface of the trachea and intestines became diseased; he lost his voice, and had symptoms similar to those in cynanche trachealis, and colliquative diarrhœa.

The adhesions of the pleuræ were extremely firm—lungs filled with tubercles and vomicæ of different sizes; the bronchial glands were similarly affected, and compressed the bronchi: the lining of the trachea was inflamed and the bronchi slightly ulcerated. The pericardium, extremely dense in structure, was distended with a great quantity of fluid mixed with large flakes of coagulable lymph. The internal surface of this membrane was thickly coated with organized lymph. In the liver was found a great number of scrofulas tubercles, and many of the mesenteric glands were converted into caseous matter—mucous glands of the ileum and cæcum enlarged, some of them ulcerated.

301. Here we have a portion of the left ventricle of the heart of a man, 60 years of age, shewing the effects of chronic pericarditis. He had for several years been afflicted with gout; during the last three years of his life, he had cough and dyspnœa, with palpitation of the heart. About a fortnight before his death, he was attacked with a very severe paroxysm of gout, succeeded by metastasis to the heart, and he expired suddenly. The pleuræ costalis and pulmonalis, adhered very firmly on both sides of the thorax; sections of the lungs shewed the effects of seropurulent infiltration. The pericardium contained a considerable quantity of yellow serum mixed with flakes of very white coagulated lymph; the internal surface was thickly coated with organized lymph, which adhered very firmly, proving the effects of chronic inflammation; and a dense adventitious membrane was formed over the reflected portion of the pericardium; the lymph was remarkably white, and, in many parts, superficially granulated. Our author has before noticed this singular appearance of the coagulated lymph in pericarditis, the effect of gout, so very different from what we see in acute pericarditis in other circumstances.

304. A case in which the heart and lungs were inflamed. A boy, 12 years of age, very delicate, was attacked with cynanche trachealis; symp-

toms were very violent. He died on the sixth day from the commencement of the disease.

Pleuræ inflamed very much—lungs hepatized—they also contained a great number of tubercles—several also beneath the pleuræ. The bronchial glands were converted into fleshy tumours, which were very vascular and compressed the bronchi—there was also a small vascular tumour in one of the pulmonary veins, which adhered very firmly. The pericardium contained about an ounce of water—its internal surface was inflamed, as were also the muscular structure of the heart, the linings of the ventricles and auricles and the coats of the arteries. The inner surface of the trachea and bronchi was highly inflamed, but lymph had not been deposited.

305. Here we have a portion of the left ventricle of the heart, shewing two small lacerated openings near its apex. A man, 47 years of age, very robust and plethoric, experienced a very severe attack of acute rheumatism in the hands and feet, which was followed by metastasis to the heart, and caused violent palpitation, accompanied with excessive pain in the chest and dyspnœa. These symptoms increased in violence, and he expired suddenly, on the fourth day from the commencement of the attack.

Pleuræ and lungs inflamed. On opening the pericardium, there was found a large quantity of fluid blood, which had escaped from the cavity of the heart, by two small lacerations near its apex. The heart was natural in size, but the serous covering, the lining of the auricles and ventricles, the muscular structure, and the internal coat of the aorta and pulmonary artery, were inflamed.

307. Heart of a lady, 63 years of age, of a very corpulent habit—had been subject to palpitation of the heart during six years, accompanied with violent headache. She frequently complained of pulsation and a singing noise in her ears; her sight diminished in power; pupils contracted; she was very nervous, and subject to attacks of syncope; the lips mostly of a purple colour. About twelve months before her death the palpitation of the heart became more troublesome; the pulsation and noise in the ears increased, and her mental powers became affected. She died suddenly. The vessels of the scalp and pericranium, as well as those of the cranium, were extremely turgid with blood; the arachnoid membrane lining the dura mater was inflamed, and slightly thickened by lymph, and that portion covering the pia mater was thickened by chronic inflammation. A considerable quantity of water mixed with coagulated blood was found between the pia mater and the external surface of the brain—there was no lesion of the substance of the brain.

The membranes covering the base of the brain were much thickened, and blood had been effused between the pia mater and the cerebrum, and between the latter and the cerebellum. This hæmorrhage was discovered to have been occasioned by the rupture of an aneurysm in the anterior-superior part of the basilar artery, where it gives off the posterior cerebral arteries; it had lacerated the membranes at the posterior part of the infundibulum, and thus the blood was forced into the third, lateral, and fourth ventricles, the fornix and septum lucidum having been broken down by the force of the blood. The carotids and anterior cerebral arteries were

aneurysmal, and on the right side an aneurysmal sac would shortly have burst. Almost all the arteries at the base of the brain were in a morbid state. Two ounces of fluid in the pericardium—heart large—between its serous covering and muscular structure a great deal of fat—auricles and ventricles very large—left ventricle very large and its parietes very thickened—mitral valve thickened—edges of tricuspid valve partly cartilaginous. The aorta and vessels given off from its arch remarkably large, particularly the arteria innominata; the internal coat of these arteries thickened with large patches of lymph. Lungs very much loaded with blood and mucus. The liver was very large and its serous covering thickly coated with organized lymph: substance of the liver as dense as carcinoma—it was nodulated.

308. Heart of a man 74 years of age. He had been distressed with difficulty of breathing for several years, as also palpitation of the heart, which symptoms had increased in violence for six months previous to his death. The pulsation of the heart and arteries very powerful and invariably irregular, his lips of a purple colour; he had all the symptoms denoting angina pectoris very strongly marked.

His breathing was very difficult—his sleep interrupted by sudden startings, and frightful dreams, secretion of urine scanty—legs became œdematous, and he expired suddenly. Ten ounces of serous fluid were found in the pericardium, and four pints of the same kind of fluid in the left cavity of the chest, and two and a half in the right. Heart enormously large, from the size of its auricles and its left ventricle, the parietes of which were very thin and soft. The semilunar valves of the aorta very much thickened, and shortened by cartilaginous and osseous deposits, and by organized lymph; two of them were lacerated, which must have allowed of regurgitation of the blood into the ventricle. It is very remarkable that there were three coronary arteries, and they were not diseased, which, our author says, satisfactorily shows that angina pectoris is not always caused by ossification, or any other morbid state of these vessels.

309. The left ventricle of the heart of a man, 73 years of age. He had been troubled with asthma and palpitation for several years; during the last eight months of his life the symptoms became more serious, and signs of hydrothorax ensued. The pulse was generally intermittent, the breathing laborious, and he was occasionally attacked with paroxysms of dyspnœa, which threatened complete suspension of respiration. The *heart's action was very powerful*, and it could be felt extensively on the chest, and nearly as low as the umbilical region.

His legs and thighs became œdematous, action of the heart more distressing, and he died suddenly.

The pericardium contained six ounces of water; left ventricle very capacious, and *its parietes very thin*—muscular structure very flaccid (passive aneurysm of Corvisart). We beg to call the reader's attention to the words in italics. The great extent and power of the heart's action does not appear very reconcileable with the great attenuation of the left ventricle, and the normal condition of the right; for it should have been stated that the right side of the heart was normal.

312. Heart of a gentleman, 55 years of age. For several years he had evinced symptoms of hepatic disease—countenance sallow—conjunctivæ yellow—bowels generally constipated—he was dyspeptic. Next came symptoms of organic disease of the heart, which increased in violence—breathing laborious, attended with great anxiety, and sometimes followed by a state of syncope—in one of these attacks he expired. The pulse had always been so frequent and irregular as not to be countable.

In the pericardium there was half a pint of bloody-looking fluid; on the inner surface of this membrane, and on its reflected portion, lymph was thickly deposited, and adhered firmly. The muscular structure of both ventricles very soft. The left ventricle was very capacious and its parietes thick—mitral valve thickened, but the opening not constricted. Cavity of right ventricle large, but the parietes thin.

Semilunar valves of aorta were ossified, particularly at their base, which may account for the irregularity of the heart's action as indicated by the pulse—there was much water tinged with blood in both sides of the chest.

Morbid Anatomy of Arteries and Veins.

393. Portions of the thoracic aorta showing inflammation and ulceration of the internal coat, from a man 34 years of age, who had been afflicted with organic disease of the heart nearly two years. Effusion of fluid into the thorax and abdomen came on a short time before his death; there was considerable hæmorrhage from the lungs and intestines, and the integuments of most parts of his body were affected with purpura. Heart very large—left auricle and ventricle very capacious—the parietes of the latter very thick—mitral valve healthy. The aortic valves slightly shortened and thickened and also inflamed, and one of the coronary arteries completely obliterated by lymph. The entire of the aorta inflamed, and some portions of the internal coat ulcerated. Signs of purpura hæmorrhagica beneath the pleura pulmonalis—lungs congested by sero-purulent infiltration—all the viscera of the abdomen surcharged with blood; the serous coats affected with purpura, and there was a considerable quantity of coagulated blood in the intestines—a great collection of fluid, on both sides of the thorax, in the pericardium and abdomen.

"This," says our author, "was a case of arteritis, excited by the magnitude and power of the heart's action, which probably might have been subdued by depletion and digitalis, if the heart had not been affected."

436. Aorta immensely dilated, particularly at its origin, arch, and descending portion.

The sigmoid valves and coronary arteries slightly ossified—the internal coat of the aorta, and vessels of the arch greatly thickened by dense cartilage and bone. The man, aged 65 years, for more than twelve months had symptoms denoting aneurysm of the aorta; effusion into the chest supervened, and he expired suddenly.

There was a considerable quantity of serum in both cavities of the chest; the lungs were emphysematous, and some of the lobes were infiltrated with sero-purulent fluid. The pericardium contained nearly six ounces of

water; heart very large; parietes of the left ventricle very thick; the cavity was very capacious, and the aperture of the mitral valve semi-cartilaginous.

438. Two portions of the thoracic aorta, showing inflammation and partial ulceration of the internal coat, with considerable thickening by cartilaginous and osseous deposits. One of the coronary arteries obliterated by lymph, whilst the aperture of the other only admitted a small bristle. The patient, 34 years of age, had been affected with cough and distressing dyspnœa for nearly two years, also violent palpitation of the heart; pulse full and very irregular; lips purple. Symptoms of hydrothorax came on, succeeded by ascites, and, about a fortnight previous to his dissolution, symptoms of purpura hæmorrhagica appeared on most parts of his body; he had also had hæmoptysis and intestinal hæmorrhage, and he died suddenly. Heart tremendously large; left auricle and ventricle very capacious; parietes of the latter very thick; aorta and pulmonary artery highly inflammed; pericardium contained about four ounces of water. About two pints of water in both sides of the chest.

446. Inferior part of the abdominal aorta, the iliacs, and main arteries of the thigh and leg ossified; some of them entirely obliterated. A man 77 years of age, who had enjoyed excellent health during the greatest part of his life; about three years previous to death suffered several attacks of erysipelas in the right leg and foot. At length the toes became extremely painful, and disturbed his rest in the night; they next began to show want of vitality, and the integuments of the foot and leg became cold and discoloured; no pulsation could be felt in the anterior or posterior tibial arteries, and sphacelation supervened. The mortification proceeded very slowly to the plantar fascia, and destroyed the integuments of the sole of the foot—the discharge of pus very offensive. Fever came on, affected the brain, and terminated his life.

A considerable quantity of fluid in the pericardium; muscular structure of the heart soft. Osseous matter on the chordæ tendineæ of the mitral valve; coronary arteries much diminished in calibre by bony matter, and some of the branches were obliterated. He never had had any symptoms of angina pectoris.

The internal coat of the thoracic and abdominal aorta was ossified in irregular dense plates. Iliacæ communes partly bony and cartilaginous, and firm portions of coagulated blood were found in them, as in aneurysmal sacs. A portion of bone extended from the iliaca externa to the iliaca interna, and the latter was completely obliterated by solid bone for nearly an inch. Not much disease in the femoral artery, till about an inch below, where it gave off the profunda, but from this to the ham it was a complete bony tube; the popliteal artery was obliterated by bone and coagulated blood, and the anterior and posterior tibial arteries were obliterated.

456. The external iliac artery and vein, also the femoral artery and vein; from a man 70 years of age. He had enjoyed good health for many years, although he was troubled with a large foul ulcer with thickened edges on the middle of the leg near the tibia; the veins were varicose. At length the wound became very painful; the pain daily increased, and there was an ichorous discharge: the surface of the sore assumed a

dark hue, and the temperature of the foot and leg was considerably diminished; in the course of a week they showed all the signs of gangrene. He suffered agonizing pain—health became disordered—integuments of foot and leg began to slough, and the discharge of pus was very offensive. He wished very much to have the leg amputated, contrary to the wishes of his surgeon—his wish was ultimately complied with, and the leg was taken off above the knee. The stump healed in the course of ten days.

Examination of the Limb.—Integuments hard and dry; muscles dark-coloured, and extremely putrid; periosteum dense and separated from tibia by pus. About seven weeks after the operation he was suddenly seized with violent palpitation of the heart and dyspnœa, somewhat resembling angina pectoris, and lived only 24 hours.

Inspectio Cadaveris.—More than a pint of water in each side of the chest; old adhesions of the pleuræ; lungs emphysematous; bronchial tubes surcharged with a dark-coloured secretion, and in parts the air-cells were enormously enlarged; pericardium contained about four ounces of water; heart healthy in its structure; valves of the aorta shortened and thickened by cartilaginous deposits; coronary arteries diminished in calibre by osseous matter; spleen converted into a cartilaginous mass. A portion of the tendinous structure of the diaphragm ossified. The main arteries of the thigh, and to where the external iliac is given off, were obliterated by lymph and coagulated blood. Likewise the veins belonging to the thigh, and as high as the external iliac, where it assists in forming the vena cava inferior, were shrivelled and obliterated.

461. Arch of the aorta, with a portion of the trachea, bronchi, and bronchial glands. Internal coat of the aorta is slightly thickened by lymph; and at the anterior part of the aorta, and nearly opposite the origin of the left subclavian artery, there is an aneurysm; its aperture large, but the sac very small. What is very remarkable in this preparation is, that by adhesive inflammation of the cellular tissue belonging to the bronchial glands, and the external coat of the inferior part of the aorta, a firm bond of union has been effected, and covered the sac of the aneurysm, which no doubt prevented the increase of the tumour. This our author considers an effort of Nature to effect a spontaneous cure. The patient, a woman 23 years of age, died of phthisis pulmonalis. The lungs were filled with miliary tubercles and vomicæ.

464. An aneurysm in the arch of the aorta, of considerable magnitude; it had ascended as high as the inferior portion of the thyroid gland; firm adhesion had taken place between the posterior part of the sac of the aneurysm and the anterior surface of the trachea; and an ulcerated opening of communication had been produced between the aneurysm and the trachea; the patient died suddenly from hæmorrhage. The parietes of the aneurysm not thicker than those of a healthy aorta. The sac contains a very dense lamellated coagulum, mixed with fibrine—internal coat of the aorta much inflamed—the left carotid nearly obliterated. This specimen is particularly valuable for showing how nearly a spontaneous cure had been effected.

467. An immense aneurysm at the arch of the aorta, which produced partial absorption of a portion of the sternum and some of the ribs. The

patient was a woman, 37 years of age—the disease had proceeded gradually for 16 months. About a fortnight before her death, the integuments covering the enlargement became inflamed, sphacelation ensued, and the aneurysm burst; the hæmorrhage was tremendous. The sac of the aneurysm had caused absorption of a considerable portion of the sternum, and the remaining part was carious, as also some of the ribs. The aorta, from its origin as far as the iliac arteries, was greatly dilated; the internal coat converted into solid bone and cartilage, and in some parts ulceration had taken place. Heart large—parietes of left ventricle very thick, and cavity large.

It is remarkable that the inner coat of the aorta should have become ossified to such a degree in so young a person.

470. An aneurysm at the descending portion of the aorta, which burst into the œsophagus and the right bronchus. The patient, 60 years of age, complained of having suffered greatly from the effects of a cough and pain in the chest, accompanied with great difficulty in breathing; his face looked sallow, lips of a purple colour, and he appeared greatly dejected; pulse 120, small, but not irregular; he also said he experienced great trouble in swallowing for some time.

Fauces appeared healthy—colour of lips and skin denoted disease of heart and liver—he was seized with hæmatemesis, which was so profuse as to threaten death—this, however, gradually subsided, but he discharged blood with his fæces—in three days after the hæmatemesis recurred, accompanied by hæmoptysis, which caused immediate suffocation.

Lungs of the right side partly hepatised, and one of the lobes of the left cavity was injected with blood. At the descending part of the aorta, near the origin of the left subclavian artery and the under surface of its arch, there is an aneurysm of moderate size: the sac is partly filled with coagulated lymph and blood; firm adhesions had been formed between it, part of the left bronchus and the œsophagus, and from ulcerative absorption of the parts, the aneurysm burst into those tubes. The aperture of the aneurysm is large for the size of the sac. Liver large, structure dense and granulated. Much blood in the intestines.

The author remarks it as very singular in this case, that there were no diagnostic symptoms to denote the existence of an aneurysm—and yet we think that the absence of signs in the lungs which could account for the cough, pain in the chest, and the great difficulty in breathing, as also the purple colour of the lips, might have induced one to suspect either the heart, or some of its great vessels, as being the seat of the mischief; and when to this we add the difficulty of swallowing, we do think that there was nearly enough to bring the disease home to its right place, viz. to some part of the aorta contiguous to the œsophagus.

477. An aneurysm of the descending portion of the aorta, the sac ulcerated. A man, 30 years of age, of a very plethoric temperament, had been troubled with palpitation of the heart for nearly eight months, accompanied frequently with violent pain in the head, and dyspnœa. Some medical men referred his disease to the heart, some to the digestive organs.

For about three months previous to his death he was annoyed with

cough and difficulty of breathing: he became very irritable, and expired suddenly.

Brain natural—blood-vessels empty—much coagulated arterial blood in both cavities of the thorax—heart and lungs healthy, but exsanguine. An aneurysm was detected in the descending portion of the aorta about two inches below the point where it gives off the subclavian artery, and the sac had ulcerated.

The lesion was found to have been produced by a large spiculum of bone, which had its origin from the anterior surface of the body of the third dorsal vertebra, and had occasioned ulceration of portions of the pleurae, which allowed the blood to flow from the aneurysm into both cavities of the thorax.

Brain and Spinal Cord—Morbid Anatomy.

501. A portion of brain, and its tunics. From a man 30 years of age, a confirmed drunkard: he was seized with delirium tremens, which was succeeded by symptoms of typhus fever; he became furiously delirious, and died in about a week from the commencement of the attack.

Inspectio.—Great effusion of blood between the arachnoid and pia mater, partly fluid and partly coagulated; these tunics were highly inflamed, as was the substance of the brain—there was likewise a considerable quantity of fluid in the ventricles. All the vessels of the brain were much distended. Liver much enlarged—structure granulated, as also that of the kidneys.

504. A portion of cerebellum, with the arachnoid membrane and pia mater. The arachnoid membrane and pia mater very much inflamed, as also the substance of the brain.

From a very plethoric man, who was attacked with ear-ache on the left side, which was very distressing—the symptoms increased in violence for three days, when a profuse discharge of pus escaped from the ear.

The patient imagined the complaint to be merely the effect of a severe cold, and employed only fomentations and poultices. On the fourth day, symptoms of apoplexy appeared, and the author was called in—he was quite insensible—breathing stertorous—pulse full and hard; and the vessels of the conjunctivæ surcharged. He was bled largely from the arm—a blister was applied to the nape of the neck, an active purgative given and cold water applied to the head—he died in twelve hours.

Inspectio.—On cutting open the dura mater on the left side, a considerable quantity of pus escaped from between the arachnoid membranes; and they as well as the pia mater were highly inflamed and thickened—the substance of the brain was very firm, and inflamed; and there was pus in the ventricles—pus was also found in the semicircular canals, cochlea and vestibulum, and the lining of the meatus auditorius externus was in a sphacelated state.

538. A portion of dura mater and arachnoid membrane, with the tumour in the plexus choroides.

From a man 64 years of age, who had a malignant tumour in the scalp at the vertix of the head; which caused caries in a portion of the parietal bone. The bone was absorbed, the dura mater exposed, and the pulsa-

tion of the arteries of the brain was seen. It was expected that the longitudinal sinus would be opened by ulceration, this, however, did not take place; the surface of the dura mater assumed a healthy appearance; granulations formed, and there was a considerable discharge of pus. The man continued in this state for two years without experiencing much uneasiness, except what he called "slight pain in the head." He died of serous apoplexy.

Inspectio.—Longitudinal sinus inflamed; the arachnoid membrane lining the dura mater, and covering the pia mater, was thickened by chronic inflammation; the pia mater was also thickened, and there was a considerable quantity of water beneath this tunic. The ventricles contained about six ounces of water, and in each plexus choroides there was a tumour, the size of a horse-bean.

543. Dura mater, with the other tunics, and a portion of the cerebrum. Blood effused between arachnoid and pia mater, which adheres firmly to the former—the arachnoid covering the pia mater is thickened. A plethoric man, 67 years of age, was thrown out of a gig, and fell on the right side of his body—he was taken up insensible. When seen by the medical attendant, he appeared labouring under compression of the brain; breathing stertorous, pupils contracted; vessels of the conjunctivæ much distended—pulse full and hard.

On examining the head to ascertain whether there was fracture of the skull, there was detected a considerable enlargement on the right side of the head beneath the integuments covering the temporal and parietal bones—no signs of fracture in any part of the cranium—some of the true ribs were fractured—he was bled, and purged—head shaved, and a cold evaporating lotion applied—on the next day he was able to answer questions, but had no recollection of the accident; the pulse remaining full and hard, he was bled again—leeches to head, &c.; he still complained of pain in the head—the brain became very much affected, and convulsion came on—he lived fourteen days from the time of the accident.

Inspectio.—Water was found between the arachnoid and pia mater—on the left side a considerable quantity of coagulated blood was found, firmly adhering to the arachnoid membrane lining the dura mater—the brain itself was inflamed.

From the Section containing the Morbid Anatomy of the Organs of Respiration we decline making any extracts, the pathology of these organs being so very much improved since the time Mr. Langstaff commenced his collection—and shall proceed to the *Organs of Digestion*—commencing with the *Œsophagus*.

872. In this preparation we have the larynx, pharynx, trachea, and œsophagus. From a woman 50 years of age, who had been long suffering from stricture in the œsophagus. She was much emaciated. A surgeon in endeavouring to pass a bougie through the strictured part, employed considerable force, so that the patient seemed half suffocated and made efforts to vomit. Two days after the attempt she died.

Inspection.—The stricture was found to be situated about two inches below the posterior portion of the cricoid cartilage; it was very narrow

and nearly two inches and a half in length. The disease was cancer, which had commenced in the cellular tissue, between the coats of the œsophagus, and by progressive absorption had made its way through the muscular and mucous coats into the tube of the œsophagus. A little below the superior aperture of the stricture the posterior part of the œsophagus was lacerated to as far as the inferior opening. The internal lining of the larynx and trachea was slightly thickened.

873. Base of tongue, pharynx, larynx, trachea and œsophagus. A woman 56 years of age, who had experienced great difficulty in swallowing for several years; a few months previous to her death she could only swallow fluids in small quantity, and that with the greatest difficulty. She died of inanition.

There was a stricture in the œsophagus, nearly an inch in length, the constriction only admitting a piece of glass not much larger than a probe. The stricture is nearly at the commencement of the œsophagus; it is formed in the cellular tissue, and had caused partial absorption of the muscular and mucous coats in the constricted part.

896. Here we have the inferior part of a stomach affected with carcinoma. The aperture of the pylorus greatly constricted by the growth of carcinomatous tubercles between its coats—there is an ulcerated opening through all the tunics, to the extent of half-a-crown, near the pylorus: the edges appear to have healed, and had united to the peritoneal coat of the pancreas which had prevented the contents of the stomach from escaping into the abdomen:—at about an inch and a half from the opening near the pylorus there is another ulcer about the size of a sixpence, the edges well defined; this only destroyed the mucous and muscular coats. There were several cancerous tubercles on the peritoneal covering of the stomach and pancreas; the latter was healthy—cancerous tumours also in the liver.

The patient, a woman 59 years of age, had been for nearly two years afflicted with an affection of the stomach, accompanied with symptoms denoting diseased liver. Several months before death she could scarcely keep anything on her stomach, and the bowels were generally costive.

897. A portion of stomach and a medullary tumour in the liver. A man, 50 years old, a baker, had for several years been subject to a disordered state of the stomach and intestines.

For nearly a year and a half previous to his death his health declined, he complained of pain and burning heat in his stomach, and sour eructations, and it was with great difficulty he could retain anything in his stomach—he became much emaciated and died.

Inspection.—Liver immensely large—many medullary tubera beneath its serous surface, as also in its substance.

Nearly the whole of the small arch of the stomach was affected with various sized medullary tumours situated between the different coats, and they were all much thickened, especially the mucous and serous, and the tumours were seen beneath them. Most of the mucous glands of the ileum and cæcum were enlarged.

For the same reason that we declined making any extracts from the section containing the Morbid Anatomy of the Respiratory Organs, we must also decline making any from that which presents the Morbid

Anatomy of the *Urinary Organs*. The vast improvements introduced within the last few years into the pathology of these organs by the labours of Prout, Rayer, Bright and Brodie, have given an entirely new aspect to this important branch of medicine.

We now take leave of our author, but not without expressing our high opinion of the ardent zeal and unwearied industry which must have sustained and borne him on in his very arduous and praiseworthy task. He would, however, have considerably enhanced the value of his contribution to pathological science, had he been more minute and more precise in his details of the symptoms during life. There is not that precision, that consecutiveness in the histories of the several cases, which modern pathologists look for. With respect to the imperfection now so glaring in the details of the cases under the head of the Morbid Anatomy of the Organs of Respiration, such imperfection must be charged less to our author than to the times in which he made his collection, times by the way, when cough, dyspnœa, and pain in the chest, contained almost all that was known of thoracic pathology.

THE FOURTH ANNUAL REPORT OF THE REGISTRAR-GENERAL OF BIRTHS DEATHS, AND MARRIAGES IN ENGLAND. 8vo. London, 1842. Pp. 361.

THE reports of Births, Deaths and Marriages, have never failed to convey much information, capable of the most useful application, and the more valuable because, until the last few years, a lamentable deficiency has been felt in our knowledge on the subjects of which these reports treat.

It is not surprising, therefore, that these volumes as they successively appear, should present many imperfections—that, notwithstanding the large body of facts produced, no inquiry respecting the progress of the population and the causes influencing health and mortality, can yet be carried out in a full, complete and satisfactory manner to its legitimate conclusion.

Of this fact the Registrar-General himself seems fully conscious—nor is it indeed possible that those who have devoted so much labour and industry to analyse and classify all the evidence furnished, could fail to be painfully convinced that we are yet unprovided with the statistical information which would render any deductions from them conclusive. The more deeply the subject is entered into, the more clearly must discrepancies and imperfections appear; and, while new means are thus suggested of supplying in future years such deficiencies, the conviction is forced upon us, that more time is yet required to attain such results, and that at present we must receive any conclusions drawn, as approximations to the truth, rather than the verified products of an inquiry based upon figures, and which therefore should yield the most accurate results.

We hail the appearance of this 4th Report, however, with pleasure, for whatever deficiencies yet remain, there is evidence that a steady advance is

making towards the attainment of a more perfect system of registration, and that the attention of the Registrar-General is pointedly directed to the best means of removing all difficulties. Nor have the past exertions been without good fruit—as will be shown by reference to the details presented in this volume, which we have no hesitation in saying is a great improvement on the preceding. It comprises the Report of the Registrar-General, and the returns on which it is founded, showing the progress of population, the births, deaths, and marriages in four years—the increase and decrease of mortality—upon the whole and in different parts of the country and different cities—the mortality at different ages, &c.

To this is added an appendix, containing three letters or reports of Mr. Farr, to whose statistical labours the public are already indebted for many very valuable papers. The three reports refer to—

1. The Progress of Population—Births, Deaths and Marriages, Fecundity of Females, &c., in which an attempt is made to deduce from facts some of the general laws by which they are regulated.
2. The Registration and Classification of Diseases as Causes of Death.
3. State of Public Health in 1840.

The bulk of the volume consists of numerous returns and tables, forming the annual abstracts upon which the report of the Registrar-General and the letter of Mr. Farr are founded—of which the causes of Death throughout the statistical districts form a large proportion.

With this general outline of the contents and pretensions of the volume, we proceed to give such an analysis of the leading facts as may lead to a correct appreciation of all the importance of the subject. However dry and uninteresting the numerical details may be from which the conclusions are drawn, the latter are pregnant with interest to the public generally, by their important influence and bearing on our social institutions and the well-being and prosperity of the mass—and they are, if possible, still more deeply fraught with interest to the medical profession, in whose charge is the public health—to whose suggestions and exertions chiefly must any ameliorations be attributed, and through whom the most valuable statistical information can alone be obtained.

Major Graham's report commences with a statement giving a comparative view of the number of births, deaths and marriages which were registered in the four years ending June 30, 1841, and it is shown that, while there is an increase in the births and deaths in 1840-41, compared with 1839-40, there is a considerable diminution in the number of marriages.* The marriages registered have been nearly 1 in 127; the births 1 in 32: the deaths 1 in 45 of the population.

Referring to certain modifications and improvements lately introduced by a new subdivision of the country into districts and sub-districts, and in the formation of the abstracts, the important objects in view are ably defined.

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* The marriages relative to the female population, were nearly 3 per cent. less than in the preceding year, and we are informed this decrease was observed in all the divisions of the kingdom except the South-Eastern counties; it was most obvious in Yorkshire and the North-Western division.

"I have thus been enabled to exhibit the ages at which the people died in all the large town districts, in the populous manufacturing and mining districts, and in many of the agricultural districts, which have only been united when the population was scattered, and when the annual births and deaths were so few in number as to be severally inapplicable to any useful calculations. Every person is naturally most interested in the district in which he resides; and the present form of publication will afford the scientific inquirer the means of framing tables of mortality,—of calculating the mean duration of life—in his own district, and comparing the results with those deduced from the facts registered in neighbouring districts or in the whole kingdom. The inhabitants will thus learn from authentic documents the relative sanatory state of their neighbourhood; the causes of disease will be discovered, and suggestions which may lead to numerous improvements will be pressed upon the attention of the resident proprietors and authorities. The friendly societies will obtain from the local tables the means of adjusting their premiums equitably to the prevailing rate of sickness and mortality, which may be a fourth or a half higher in some districts than in others, and will be found to differ among the same classes, so as to affect materially the money value of assurance and the stability and prosperity of the societies. Materials of thought and guides of action will thus be afforded, on questions affecting health, life, and death, to scientific and benevolent persons in all parts of the kingdom." 3.

Progress of Population.

We find the population of England enumerated in the year 1821 comprised 3,105,895 more persons than had been enumerated in 1801, whilst the increase of numbers in the 20 years from the 31st of May 1821, to the 6th of June 1841, was 3,930,416, leaving the army, navy, marines and registered seamen out of the account.

To obviate this source of error arising from the difficulty in this country of ascertaining the exact number of males that should be taken into account, it has been deemed more relevant to the object of inquiry, to compare the marriages and the births with the females living, than, as has been more usually done, with the entire population.

Thus the increase of females in the 10 years, 1831—1841, being 14.17 per cent., or at the rate of 1.334 per cent. annually, the Registrar-General has thought it better to assume at present that the whole population of the kingdom has increased within the last 10 years at the same rate as the females enumerated, rather than "attempt to fix the exact rate of increase among males, by making a series of suppositions relative to the disturbing effect of the army, navy, marines, registered seamen, emigration, and the possible omissions in the five censuses."

The female population has been taken therefore as the basis of nearly all the comparisons.

MARRIAGE.

Proportion of Minors to Adults married.—The Rgistrar-General observes that—

"As the age at which marriages take place, in connexion with the increase of population, is supposed to have a great influence upon the misery or happiness of the people, I wish I could have stated the ages of the persons who were married in every county; but the exact ages were only specified in a small number of

districts; and the number of districts in which this was done last year was less than in any previous year. The following tables, however, compiled from the Registers of three years, will show the ages at which 40,874 persons were married." 9.

"More than half of the men (10,383), and half of the women (10,424), were married between the ages of 20 and 25: 2,711 women, and 587 men were married under the age of 20. The mean age of the men was 27.30 years, of the women 25·35 years." 9.

BIRTHS.

In reference to births there is a lamentable deficiency of authenthic data, as the following remark attests.

"All the births are not registered. The number omitted amounts to several thousands. I hope that the registrars, when they are made acquainted with this fact, will be induced to employ more vigilance in discovering the births that occur in their districts; but I am of opinion that the registration of births will not be complete until it is enacted by law that the father or mother, or some other qualified informant, shall give notice within a fixed period to the registrar of a birth having taken place." 11.

Proportion of Males to Females Born.

"The births of 760,983 boys, and of 725,689 girls, were registered in the three last years, so that, in 100,000 births, 51,187 were boys, 48,813 girls; or the boys were born in the proportion of 10,486 to 10,000 girls. The excess of males born was greatest in the northern, least in the southern parts of England. The greatest number of births is registered in the winter and spring quarters; in those quarters, also, the proportion of males to females born is greatest. In the two last years, 105 boys have been born to 100 girls, or 21 boys to every 20 girls." 12.

Notwithstanding this excess, it is found that the greater mortality of males reduces them nearly to an equality with females by the age of 20, and at the last census the males were to the females enumerated as 10,000 males to 10,465 females. Thus, by the silent operation of certain general laws, does the Creator ensure that equilibrium and relative proportion of the sexes essential to the well-being of the species, and these tables afford many examples "of the secret adjustments" which exist and of the laws which regulate all *increase and decrease* of social combinations.

Mortality.

It appears that more deaths were registered in the year ending the 30th of June, 1841, than in any preceding year—making due allowance for the increase of population, it would seem that the mortality of that year slightly exceeded the mortality of the preceding year, and was nearly 6 per cent above that of the year 1838-9. There are no means of knowing what the average mortality actually was before the present system of registration was introduced—according however to Mr. Edmond's estimates the annual mortality of females was 2·05 per cent. during the 18 years, 1813–30.

The relative annual mortality per cent., as shown by the mortality of females, was 2·055 and 2·157, and 2·171 in the three years. More deaths were registered in the year ending the 30th of June, 1841, than in

any preceding year—the number registered 355,622, having exceeded the deaths in the three.

Although the aggregate increase of mortality, if we assume Mr. Edmond's estimate to be correct, may not be deemed very considerable—yet it *is an increase*, and we are entitled to look for progress in a contrary direction. With the advance of civilization, of medical science, and the sciences generally, who can doubt that, if this increased knowledge of the causes of mortality and the influences injurious to health—together with increased means for combating them were largely and faithfully applied for the welfare of the mass of the population, there would be an obvious and marked decrease instead of increase in the mortality.

Whence then this retrograde course?

We must look for the causes, doubtless, in those conditions which influence the health of the great mass of the labouring and pauper population. The exposures with which the public press has been teeming of the recklessness with which human life is deteriorated and perilled, whenever large bodies are collected together—whether for labour in our manufactories or mines—parochial relief in our poor houses—or for punishment in our gaols and prisons, and the frequent violation of every principle of hygiene and of enlightened policy or humanity, manifested by those in whose hands fortune has placed the control of the conditions under which the labouring population must toil for their bread, or suffer charity or punishment, significantly tell the tale to which these statistical results do but point the moral!

Doubtless legislation cannot altogether supply that kindly sympathy which is so much wanting between those who command and employ, and those who serve, and of which we believe there is less in this country than in any other in Europe—still there is much left for legislation to do.

Lord Ashley's humane and disinterested efforts, evinced by the Factory and Colliery Bills, are in the right direction. Legislation may at least prevent such atrocities as a whole manufacturing population bringing up a decrepit, yet precocious and vicious generation, by compelling their children of four years of age to labour eight, ten, and twelve hours a day—and often through the night—before they attain the age of puberty.

So, in reference to the diet and system of gaols, and that of poor-houses, which it is the unfortunate tendency of the present administrative theories to assimilate with prisons—there is sufficient knowledge widely spread in the medical profession throughout the length and breadth of this kingdom—not only to enlighten the Legislature as to the true principles of hygiene and the nature and bearing of all the influences tending to impair health and destroy life—but judiciously to carry out the application of those principles which a truly enlightened policy would dictate.

Unfortunately for all parties—for the mass of the people not less than for the members of the profession, it happens that professional knowledge and acquirements have been valued at an inverse ratio with the facility with which they can be obtained. The supply having been overabundant, and disproportioned to the demand; the usual consequences of an excess of products have been in operation, and medical acquirements have been depreciated and undervalued.

Thus it is—that although a board of guardians would shrink from the disgrace and absurdity of advertising for a baker, who would contract to supply bread for paupers at a certain loss upon each pauper's supplies, or even for a coffin-maker, to furnish the materials for a burial of the valueless remains at less than prime cost, they do not scruple—basing their demand on the exigencies of his position in their parish—to call upon a medical man to pay a visit at the houses of poor patients, at varying distances, and not only to give them the benefit of his skill and the cost of time, *but medicine*, at the price of 3¼d. a visit—which by no possibility can cover the prime cost of the drugs as purchased in the market! Nay, their cost, if he be a conscientious man, must often be ten times the amount fixed for his visit, and the benefit of his time, skill, and drugs! Is not this a scandal to a Christian country and a system of pillage and robbery under a very flimsy mask?

While such things are—while such practices are tolerated in this country by the legislature, the Government and society at large—it must be that misery and mortality will go on hand-in-hand increasing—and though the humanity of the mass of medical men full often supplies, gratuitously and most conscientiously, that care and attention which their guardians with shortsighted niggardliness—(wasteful improvidence in the long run)—refuse to provide for the poor—the mortality will increase, and the alienation of the labouring classes from the superior ranks is not likely to diminish.

The Alverstoke board of guardians have become a notable type of the heartlessness and stolidity which drives the destitute to extremities. In reference to some of the more ordinary causes of mortality dependent on adventitious circumstances and localities, the following remarks, coming from the Registrar-General, are worthy of attention.

"It has been known for many years that the mortality is, as a general rule, higher in cities than in the country; and it has always been a matter of much interest to know the relative mortality of different cities. Since it has been proved that the mortality of cities may be greatly reduced, the question has acquired additional interest from the facility it affords for analysing the causes of insalubrity, demonstrating their existence, and suggesting the means by which the ravages of diseases may be effectually arrested."

"The town mortality generally increases with the density of the districts: which would not be the case if the same neglect of the means of sewerage and purification did not pervade the worst parts of all of them to nearly an equal extent. The influence of site, habits, diet, and employments on the duration of the lives of the inhabitants, can only be successfully investigated on the spot; and I am happy to learn that this important duty has been undertaken in Leeds, Birmingham, and other places, by the Town Councils and medical societies." 15.

The greatest mortality has been in Chester and Lancaster, forming the North Western Division; the lowest number of deaths in Wilts, Dorset, Devon, Cornwall and Somerset—forming the South Western Division. The mortality in the first division being nearly half as high again as in the second.

It appears, from a table furnished, that the increased mortality already referred to, fell upon the young and aged, the mortality of persons be-

tween the ages of twenty and sixty years, having varied very little in the four years.

This might, of course, have naturally been anticipated; when deleterious influences are brought to bear upon large numbers of mankind, it must ever be those at the beginning and decline of life, who principally sink under the diseased states generated.

Education versus Marriage.

Some curious details are furnished by the marriage registers, taken as tests of the state of education. The test is made with reference to writing, and it is well observed that, the simplicity of this test is its great recommendation.

"The parties are neither asked whether they can write or read—nor formally requested to write, but sign the marriage registers with their name or their mark in attesting the marriage, and the tables show the proportion who signed with marks. The parties who marry are, on an average, about twenty-five years of age, so the test shows the state of education ten or twenty years ago, and the subsequent inducements to the retaining of the information and skill then required."

"It appears, from the average of three years, that 33 men in 100 and 49 women in 100 signed with marks. It is, therefore, probable that only 67 men and 51 women in 100 can write their own names."

It is further shown that there are great differences in the state of education, in different counties. Thus it is calculated that 84 in 100 men can write in Cumberland, and only 48 in Bedfordshire.

The Tabular Abstracts of Births—Deaths—Marriages and Ages at Death of Males and Females—are given in great detail, and they seem compiled with care, and must afford valuable tables of reference under their different heads.

Mr. Farr's three papers—the first on a subject connected with these abstracts, the second, on the classifying of the causes of death, and the third, on the state of the public health in the year 1840, afford some further elucidations—particularly the second and third, well repaying attentive consideration.

The investigation of epidemic diseases mentioned in the appendix to the last report, is still deferred, we are told, in order to render the series of facts more extensive—as also a promised paper on the causes of death at different ages. From Mr. Farr's known industry and ability we look forward with pleasure to the appearance of these contributions to medical and statistical science.

The first of Mr. Farr's papers commences with an Analysis of the Increase of Population in geometrical progression.

How the rate of Increase is accelerated and retarded?

"A population increases in regular geometrical progression when the births exceed the deaths, and the ratio of the births and of the deaths to the population remains constant. Thus in England every 100 persons living in 1801 had increased to 132 in 1821; and every 100 persons living in 1821 had increased to 132 in 1841; the 100 persons living in 1801 had, therefore, increased to 175 in 1841, and at the same rate will amount to 200 in the year 1850, 300

in the year 1879. The mean rate of increase was ·0141 annually; that was probably the excess of the births over the deaths. Grain, fruit, animals, also, increase in geometrical progression; but the increase of capital, at compound interest, is the most familiar example of this kind of progression, and may render it intelligible to the general reader." 134.

Proportion of Persons who marry in England—Marriage Age—Fecundity of Females.

It appears that 10 in 20 of the people of this country are born in wedlock—and, by the census returns, that the number of women who attained the mean age of 24·3 years in the middle of 1840 was about 143,830, of which it is calculated 113,361 married for the first time. The result therefore is that 79 women in 100 who attain the age of 24 are married, and that 21 in 100 are never married.

About 132,236 men were enumerated at the mean age of 25·5 years at which men are first married. So that of 100 men enumerated who attain the average age at which marriage is consummated, 82 do marry and 18 do not. Making allowance, however, for soldiers, sailors, &c. not included, it seems that the proportion of men who marry is only 78, or 1 less than the proportion which was found for the female sex.

It is further stated the returns show that, by re-marriages, about 100 women marry 108 men, and 100 men 113 women.

"More women are married than men; but the women are married at an earlier age, when the number of them living is greater than the number of men living at the age when men marry, so that, at the respective ages of marriage, about 79 in 100 of each sex marry. Of 100 women married, 8 were widows; of 100 men, 12 were widowers."

"As the number of marriages, however, has increased for many years, and the expectation of life among women at the nuptial age is greater than that of men, it is probable that about 1 in 3 widowers and 1 in 4 widows re-marry.

"The fact, that one-fifth of the people of this country who attain the age of marriage never marry; and that the women, though capable of bearing children at 16, and certainly nubile at 17, do not marry until they attain a mean age of 24·3, the men until they are 25½, proves that prudence, or 'moral restraint,' in Mr. Malthus's sense of the term, is in practical operation in England to an extent which had not been conceived, and will perhaps scarcely be credited when stated in numbers." 136.

It has been elsewhere laid down as an axiom, that poverty is the state in which population most rapidly advances, and that marriages are more frequent, more early, and more prolific, among the poor than among the rich: and this is accounted for by the supposition, that a man of education looks to advancement in the world before he saddles himself with the expenses and cares of domestic duties; whereas, as a poor man cannot be in a worse condition, he looks, on the contrary, to the possession of a wife and helpmate as the only solace at his command.

If this be true, and the tables at present furnished do not enable any very accurate test to be applied, it must be inferred that of the one-fifth who never marry, by far the larger proportion are people of education seeking for advancement as the first necessity of their lives, and yet too insecure to give "hostages to fortune," according to Bacon's definition, in the shape of a wife and children.

The influence of these circumstances on the progressive increase of the population and on the fecundity of marriage is very curiously yet clearly brought out.

"The actual fecundity of the married women of this country may probably be expressed accurately enough, if a correction be made for the increase of marriages, and for the illegitimate children borne before and after marriage by women who marry, at 5 children to every woman married, and 4.5 children to every wedding. The 5 children replace the two parents, and those persons who from early death or from other circumstances bear no children.

"The number of women living and enumerated, June, 1840, was, in round numbers, 1,630,000 aged 15–25: 1,272,000 aged 25–35: 900,000 aged 35–45; and these three ages, at which 3,802,000 women were living may be considered the ages of childbearing, the middle period being that in which the greater number of children are produced.

"The 3,735,900 women living in the two years, June, 1839–41, between the ages 15–45, gave birth to 562,346 children annually; 66 women produced 10 children every year: only 1 in 7 women (6.6) at the childbearing age gave birth to a child in the year. Children are occasionally borne at 15, or as late in life as 55; but if the mothers of the 562,346 children had all been aged 17–40, there would have been only 1 annual birth to 5 women living of that age. It has been calculated that, on an average, 2 years intervene between the birth of every child; or that of 2 women one has a child every year. After a correction has been made for unprolific women, the difference between 1 in 2, and 1 in 5 or 6, corroborates the previous result, and shows how much, notwithstanding the increase of population, the reproductive force is repressed by prudence.

"The population of this country may have increased, and may increase by an augmentation in the number of marriages and births; or, by a diminution in the number of deaths, and the consequent prolongation of life. The annual number of births may be increased in two ways: by an increase in the number of persons married, and by earlier marriages, which shorten the interval elapsing between successive generations. Thus 113,361 women were annually married (for the first time) in each of the two years ending June 30th, 1841, when 160,000 women attained the age of 20. If 10,000 be subtracted for sickness, infirmity, and incapacities of various kinds, 150,000 will remain who might have married, and thus have augmented the numbers married by one-third (32.7) per cent. The increase by birth, exclusive of illegitimate children, is about 3.4 per cent. annually; and if the marriages and births be increased one-third, or in the above ratio, the increase by birth will rise to 4.3 per cent., leaving, after subtracting the loss by death, (which shall be supposed to remain stationary at 2.2 per cent.) instead of 1.3, the present rate, 2.1 per cent. annually as the rate of increase, raised to its height by the greater number of married child-bearing women.

"I shall not discuss the litigated question, whether early marriages are more fruitful than late marriages; for, if even women who married at a mean age of 30 bore as many children as women married at 20, it will be immediately perceived that the annual number of births, and the rate of increase, will be widely different in the two sets of circumstances. It may be assumed that at the birth of their children the age of the mothers will be advanced equally in both cases six years, for instance, on an average—from the time of marriage; the mean age at the time the children are born will consequently be 36 years and 26 years. The interval from the birth of the mothers to the birth of the children will be 36 years and 26 years; and according to the same law, the interval from the marriage of the mothers to the marriage of the children will be equally 36 years and 26 years. Now, in this case, altogether independently of the reduction by death in the 10 years, if the same number of women continue to marry, and if the expectation of life and the fecundity of the women remain unchanged, the births will be raised above or de-

pressed below the present number, in the inverse ratio of 36 and 26 to 30. At present, the interval from generation to generation, from the birth of the parents to the birth of their children, may be 30 years; in the case of the early marriages, a generation would be reproduced every 26 years; of the late marriages, every 36 years; and, as by the hypothesis, the number born in *each generation* would be the same, the number born *in a given* time would differ in the ratio of the intervals which separated the generations." 138.

"I do not advance the preceding numerical statements as absolutely correct or definitive; and I hope to be able to resume the examination of these important subjects at a future time, when more extensive materials have accumulated and have been analyzed. None of these qualifications will, however, invalidate the general principles; and the facts prove, beyond all question, that the population of the country is susceptible of an immense expansion; that it is voluntarily repressed, and always has been repressed, to an extent which has not been clearly conceived or stated; and that the means in the hands of nature, and of society, for increasing and diminishing the population are simple, efficient, and quite compatible with our ideas of the benevolence of the divine government of the world.

"Writers upon population have, perhaps, exaggerated the influence of the increase of population on the strength and prosperity of states; but its importance is unquestionable, and it must always be interesting to understand the laws which regulate the death—the reproduction of individuals; and which, in the midst of the struggles of the antagonist forces of disease and death, the losses by war, want, vice, and error, ensure the perpetuity and life of nations." 139.

"When the rate of increase is to be lowered, the usual course appears to be to defer to the extent required the period of marriage. If the supplies of subsistence were cut off, if science and industry were unable to convert a larger proportion of the materials of nature into food, and all the outlets and demands of emigration were closed, the population might unquestionably be brought to a stationary condition without increasing the deaths—*by reducing the number of marriages.* At present one-fifth of the women who attain the age of 24.3 years never marry; if one-half of the women who attain that age never married, and illegitimate births did not increase, the births would ultimately not exceed the deaths, and the population would remain stationary. But the same end would be almost as effectually and less harshly attained, though four-fifths of the women who arrived at the mean age of marriage, continued to marry, if instead of beginning to marry at 18, none married under 23, and the mean age of marriage were raised to 30 years; for the interval from generation to generation would be thus extended, the children to a marriage diminished, and the number of women at 30 would be reduced by the loss of the younger lives." 140.

And thus Mr. Farr would show that if any part of the population of this country is increasing too fast, "the means of repression are simple, would not be harsh in their operation, and are at the command of the immediate sufferers." Again, he adds—

"Should the time nevertheless come, when the country is sufficiently populous, and it should be desirable to retard or stop the progress of population—the analysis of the marriages, births, and deaths, in connexion with the census returns, will show, as has been already proved, that this may be effected without raising the mortality. The principle of 'an increase of the population in geometrical progression has nothing in it fatal, irresistible, inexorable; upon a rigorous analysis of the facts, it is seen that it consists of nothing but an excess of births over the deaths, and becomes a negative quantity, or 'a decrease of population in geometrical progression,' if the births cease to maintain the same ratio to the population; and the births may always be reduced rapidly by retarding the period

and number of marriages: so that the mathematical terror, 'a geometrical progression,' cannot alarm any one in the light of day. I do not desire to disguise or underrate the gravity of the fact, that the population of England has increased, as the censuses prove,—and the excess of births over deaths leaves beyond doubt,—in a geometrical progression for 40 years, and at a rate by which, if continued, it will double every 49 years."

This very able paper concludes with the following consolatory remarks for the disciples of Malthus.

"Both these writers (Dr. Price and Mr. Malthus) contributed essentially to the development of the true theory of population; both rendered important services to mankind by their investigations; but the facts since elicited, and the further prosecution of the inquiries which they commenced, have shown that, while the study of the doctrine of population is fraught with instruction, and is suggestive of prudence, it is calculated to inspire a calmer confidence in the ordinances of nature, and to confirm our faith in the destinies of England. The expansion of which the reproductive force in the population is susceptible, and the progress of science and industry, must set at rest all dread of depopulation; which has apparently never prevailed for any length of time since the earliest historical ages. The population, it has been proved, has increased in a geometrical progression ever since the first census in 1801; and the rate of progression has been such that, if it continue, the numbers will have doubled in 1850; double the number of families will exist, and must be supplied with subsistence in England; but there will also be double the number of men to create subsistence and capital for her families, to man her fleets, to defend her inviolate hearths, to work the mines and manufactories, to extend the commerce, to open new regions of colonization; and double the number of minds to discover new truths, to confer the benefits and to enjoy the felicity of which human nature is susceptible." 141.

"The fallacy to which I have referred rests on this doctrine: 'the population is increasing in a geometrical progression, the means of subsistence in an arithmetical progression, and unless wars, destructive epidemics, marshes, dense towns, close workshops, and other deadly agents, carry off the excess of the numbers born—unless the outlets of life and blood be left open—the whole people must be exposed to a slow process of starvation.' This has been considered by some the doctrine of population. The nature of the increase in geometrical progression has been already examined; and there is no evidence whatever to prove that while capital increases in geometrical progression (compound interest) the subsistence and power of the people of these islands have increased, or will increase, in arithmetical, and not in geometrical progression. It is not known how much subsistence has increased in the last 40 years; and it is pure empiricism to pretend to say that the rate of progression has been, or will be arithmetical, if anything more be meant by that formula than the plain incontrovertible fact that the increase of subsistence is limited. But independently of these considerations, and any matters of controversy which it would be inconvenient to advert to here, the facts in the previous part of this paper dispose of the fallacy,—which, if it cannot be employed by any but the most depraved to sanction the destruction of life, might slacken the zeal of some in ameliorating the public health, by lending a colour to the dreadful notion that the excess of population is the cause of all the misery incidental to our condition or nature; and that the population might at the same time be diminished and saved from starvation, by epidemic diseases, unhealthy employments, or pestilential localities. What are the facts? An increase of the deaths can only diminish the population if the number of births remain stationary. It has been shown that the number of births may be increased to an incredible extent; experience has proved that the births almost invariably increase when the mortality increases; and it will be seen, in the Tables of the Report, that where the mortali-

ty is greatest, the births are most numerous, and the population is increasing most rapidly. An increase of the mortality is therefore no specific for establishing an equilibrium between subsistence and population. The more, in fine, the doctrines of population are studied, the more deeply must be impressed upon the mind the sacredness of human life, and of the safeguards by which it has been surrounded by God and the laws." 143.

The Second Paper, devoted to the registration of the *causes of death*, is chiefly explanatory of the nosological arrangement adopted, furnishing, for the information of the Registrars of Districts and the profession generally, a statement of the chief objects to be kept in view in reference to the registration.

It is prefaced by the invitation of the Presidents of the Colleges of Physicians and Surgeons, and the Master of the Society of Apothecaries, circulated in May, 1837, to "all authorised practitioners throughout the country to follow their example, and give, in every instance which may fall under their care, an authentic name of the fatal disease, and to assist in establishing a better registration in future throughout England."

In reference to this subject some question has lately been raised as to the equity or fairness of calling upon members of the medical profession to contribute the information required by the Registrars, as adding one more to the already large demands made upon their gratuitous labour by Poor Law Guardians and public institutions—a question no doubt which never would have been raised were there not too many examples constantly before them of an ungenerous effort, first to undervalue, and secondly to profit by, professional time and services, left without remuneration.

So important however to mankind do we consider a complete and accurate registration of the causes of death, that we would fain hope—even though the legislature and government may have thrown upon medical men the onus and labour of providing the information at their own cost,—which by its value and importance might well have merited remuneration —that nevertheless it will not be withheld.

The explanatory statement thus describes the dependence of the Registrars upon the profession, and the public objects to be attained by their assistance.

"The recent Act for registering Births, Deaths, and Marriages, in England, presents an opportunity for obtaining that great *desideratum*, in medical statistics, a more exact statement of *the causes of death*, in the case of every registered death throughout the whole of England and Wales, after the month of June next ensuing.

"The Register-Books in which all deaths are to be registered after the last day of June, 1837, contain columns wherein may be inserted the *cause of death*, in juxtaposition with those other important illustrative circumstances, the *sex*, the *age*, and the *profession* or calling of the deceased person. Each Register-Book will also be assigned to a particular District of small extent, and will thus show in what part of the kingdom each death has occurred. If, therefore, the cause of death be correctly inserted, there will exist thenceforward public documents, from whence may be derived a more accurate knowledge, not only of the comparative prevalence of various mortal diseases, as regards the whole of England and Wales, but also of the *localities* in which they respectively prevail, and the *sex*, *age*, and *condition of life* which each principally affects.

"For the attainment of this object, it is necessary to ensure, as far as it is possible, the correct insertion of the '*cause of death*.' It is obvious that on

this subject the requisite information can seldom be given to the Registrar, except by the medical attendant of the deceased person; and that even if the Registrar be a medical practitioner (which in many instances will be the case), yet will he often be unable to ascertain the truth in this respect, if he is to depend solely on the reports of persons ignorant of medicine and of the names and nature of diseases; and it cannot be expected that from his own knowledge he will be able so far to correct their errors as to ensure a statement worthy of credit. The requisite information must therefore be supplied either *directly* or *indirectly* by the medical attendant of the deceased person;—that is to say, if such medical attendant is not applied to by the Registrar, he must afford the requisite information to those other persons to whom the Registrar must apply." 145.

In the following observations we cordially agree, referring to the importance of uniform statistical nomenclature.

"The advantages of a uniform statistical nomenclature, however imperfect, are so obvious, that it is surprising no attention has been paid to its enforcement in bills of mortality. Each disease has in many instances been denoted by three or four terms, and each term has been applied to as many different diseases; vague, inconvenient names have been employed, or complications have been registered, instead of primary diseases. The nomenclature is of as much importance in this department of inquiry as weights and measures in the physical sciences, and should be settled without delay." 145.

The worthlessness of vague information can not be more strikingly exemplified than in statistical inquiries. We would gladly see Miss Edgeworth's maxim in letters of gold in every hospital and in every sick room. "He that would make his knowledge useful must first be at the pains to make it exact."

This want of exactitude in observing and recording, offers, in truth, the greatest obstacle to the attainment of the highest results of a general registration. Mr. Farr remarks that many of the entries are incorrect—many not furnished by medical men, and in vague and ill-defined terms, such as "*decline*—fit—inflammation—visceral disease—cold—long illness!" &c. So also local terms are employed which appear to denote different diseases in different parts of the country.

This suggested the necessity of introducing, as far as might be found practicable, the use of a uniform intelligible nomenclature, and under the head "statistical nosology" a nomenclature will be found obviously framed with great care and judgment, and we think it upon the whole tolerably complete and satisfactory, and even were it less so, the importance of adopting uniform nomenclature throughout the country in reference to these returns is so great, that we strongly urge upon the profession a strict adherence to this statistical nosology—nor will time be thrown away in a careful perusal of the notes appended to the various classes of disease with references to the authors whose writings represent the prevailing medical opinions which in a great measure guide the English practitioner, and who are cited therefore, either because they have given summaries of the present state, or have extended the domain of our knowledge in those particular branches by original investigations. As the object has been to refer to writings easily accessible, the names of few foreign or ancient writers have been given, and it will be found that the writers at the end of each class have generally treated more especially of the diseases of the class.

At the conclusion of the nosology, a well-digested paper is given, headed "Analysis of Morbid Phenomena—Nomenclature," in which Mr. Farr passes rapidly in review the elementary phenomena of disease, and considers more particularly how—

"The numerous, and, in some instances, apparently arbitrary species have been distinguished by original and systematic writers; for without admitting the assertion repeated by Cullen, that 'species are created by nature, genera by the human mind,'—as our ideas both of species and genera are creations of external nature *and* of the percipient mind,—the determination of these primary elements of generalization is unquestionably more important than the subsequent steps in the process, because an error here will be irreparable. The species in the statistical nosology occur in the registers as well as in all the systematic medical works; and my object is not so much to propose anything new, either in the names or the species, (it being the very nature of an arrangement of the facts observed by all the practitioners of a country, to follow, as the observers themselves follow, the discoveries of pathology), as to point out some of the principles which have guided us in the distinction of species, and in the formation of the other divisions of the classification." 186.

The following observations give the key to the whole of the nosological arrangement advocated by the writer.

"In the constitution of species, more attention is now justly paid to structural than to functional changes; the former are often the proximate causes of the latter; but some pathologists, led astray by a principle of classification applicable to natural history,* or pre-occupied by their anatomical studies, and the recent discoveries in morbid anatomy, have denied the existence of dynamic disease; and, by a violent and improbable hypothesis, have assumed that every case, for instance, of insanity, convulsion, or syncope, is the *symptom* of a congestion, inflammation, or some other evident anatomical lesion. It would be as reasonable to assume that the needle of the mariner's compass never loses its magnetic properties but by evident oxidation.

"Upon an examination of the registers of the fatal diseases in the first years of registration, made, as is evident, from the instructions, without any preconceived notions on classification, it was found that, exclusive of epidemic diseases, a majority of the cases had been referred to particular organs, which were named or unequivocally indicated by the nature of the lesion. In other cases, such as hæmorrhage, dropsy, abscess, mortification, and cancer, the seat of the disease was seldom mentioned. The first class was arranged in groups, as sporadic diseases of the nervous, circulating, respiratory, digestive, urinary, generative, locomotive, and integumentary systems; the second, as diseases of uncertain seat

* "Pour que chaque être puisse *toujours se reconnaitre dans ce catalogue*, il faut qu'il porte son caractère avec lui: on ne peut donc prendre les caractères dans des propriétés ou dans des habitudes dont l'exercice soit momentanée mais ils doivent être tirés de la conformation: *Cuvier*—Règne Animal, tome i. p. 7. The problem in natural history is or *was*—Given one of many thousands or millions of individuals, what is its name and place in the 'catalogue?' As the specimen is often dead, or, as in fossils, has been only partially preserved, the superior importance of characters derived from the most permanent structures of the organization is obvious. Recognition is not a main object of any classification of diseases; and the most expert anatomist would, in numberless instances, find it impossible to divine from the after-death appearances the previous pathological phenomena."

(*de incertis cedibus.*) This mode of viewing the facts is common in England; it has been adopted in the treatises on the practice of physic which are most generally in the hands of practitioners; and, what is of more importance, by the authors who have devoted themselves successfully to research, and have naturally contributed most to the formation of the reigning medical opinions. The Library of Practical Medicine has followed this arrangement; and we have the original works of Abercrombie and Marshall Hall, on the Diseases of the Nervous System; Hope, on the Diseases of the Circulating System; Williams, on the Diseases of the Chest; Abercrombie, on the Diseases of the Stomach and Intestines; Prout and Sir Benjamin Brodie, on the Diseases of the Urinary Organs; Willan and Bateman, on Cutaneous Diseases; not to mention others, and the treatises on midwifery, or the surgical treatises on the diseases of the joints and bones. Upon the other hand, there are essays and papers by Carswell, Watson, Sir James Clark, Mueller, Carmichael, and Walshe, on hæmorrhage, dropsy, tubercle, cancer, with a subordinate reference to the parts affected. The French writers, Laennec, Andral, Chomel, Rostan, Lallemand, and Louis, from whom we derived so much, have cast their practical works in the same mould. This mode of grouping and considering the different types of sporadic disease appears to be practically the best—to involve few errors in carrying it out, to lead to useful results, and to be in conformity with the general principles upon which diseases have been constituted and named.

"It will be observed that the different heads in the statistical nosology are numbered and sometimes subdivided; they may be called species, provided the term be not understood in the strict sense it bears in natural history:* with the technicalities of which medical science should not be encumbered, as it has principles of its own, and can derive more advantage from the methods of chemistry and natural philosophy." 190.

We have no hesitation in recommending this paper to the attention of all practitioners. It comprises observations on the causes and nature of diseases—a portion of which we have just quoted—on sporadic diseases of uncertain and variable seat—on inflammation—local diseases—diseases of the nervous system—of the circulatory, respiratory, and digestive organs—of the diseases of the urinary and locomotive organs—on diseases produced by poison—epidemic, endemic and contagious diseases—which he proposes should be called zymotic diseases, for reasons given—viz.

"It must be admitted, with respect to all the forms of these diseases, that the body, in the cycle of external circumstances through which it passes, may run into them spontaneously (in this they differ from the class of diseases referred to external causes); for it is impossible to trace them invariably to infectious sources; it is not *à priori* more improbable that they than that other diseases should arise spontaneously; and it is impossible to account for their existence in the world upon any other principle than that of spontaneous origin. Still the property of communicating their action, and effecting analogous transformations in other bodies, is as important as it is characteristic in these diseases, which it

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* "La génération étant le seul moyen de connaître les limites auxquelles les variétés peuvent s'éntendre, on doit définir, *l'espèce la réunion des individus descendus l'un de l'autre, ou de parents communs*, et de ceux qui leur ressemblent autant qu'ils se ressemblent entre aux.—*Cuvier*, R. A., tome i. p. 17. With this definition before our eyes, we cannot confound the species and genera of natural history with those of diseases."

is proposed therefore to call, in this sense, zymotic.* A single word, such as *Zymotics*, is required, to replace in composition the long periphrasis 'epidemic, endemic, and contagious diseases,' with a new name, and a definition of the kind of pathological process which the name is intended to indicate, persons who have not made themselves acquainted with the researches of modern chemistry can scarcely fall into the gross error of considering this peculiar kind of diseased action and vinous fermentation absolutely identical, or of considering that others entertain that opinion. Liebig draws a distinction between fermentation and putrefaction; the reasons are more urgent for distinguishing the pathological transformations from fermentation or putrefaction, while it is admitted that they are of a chemical nature, and analogous to fermentation; by which they are moreover to a certain extent explained, although so little is known of the series of chemical changes and products in any single zymotic malady, or of the chemical reactions of the living forces and organs. Small-pox is by hypothesis the transformation of varioline, and certain unknown concomitant chemical changes in the blood and skin; manifesting the important symptoms which fall under direct observation." 201.

On this subject Mr. Farr has made many suggestions and reflections, if not altogether original, yet sufficiently novel in some of their applications to attract and repay attention.

It has been well said, by an eloquent writer, whom the world has lately lost, "who combines anew the knowledge received from other minds, explores its hidden and multiplied relations, and gives it forth in fresh and higher forms, is the rare possessor of an original mind." And, fully agreeing with Sir Philip Sidney, that "thinking nurseth thinking," we strongly recommend the paper as furnishing excellent materials for thought.

In describing the different effects of poisoning, there is a pithy condensation of known facts and a suggestion for nomenclatures founded upon an hypothesis—that would undoubtedly be attended in one sense, with many advantages.

In very minute doses poisons have no visible effect, or have a sanative effect on the organization; in large doses their action is generally violent and local (acute); in moderate, long-continued, repeated doses, characteristic series of effects are produced, such as the mercurial salivation, erythema, and tremour, lead colic, and paralysis. If small doses of substances, poisonous in larger doses, are innocent or remedial, food in excess acts by its quantity like a poison, and gives rise to acute indigestion, or to the trains of symptoms indicated by gout, plethora, bloated obesity. The alimentary liquors, of which alcohol is the basis, intoxicate in large doses; and frequent intoxication induces delirium tremens, cirrhosis, and other pathological phenomena, which may be designated

* "From ζυμόω, I ferment: zymosis fermentation, and zyma ferment, may also be employed in English, *not in the sense* which they have in Greek, but as general designations of the morbid processes and their exciters. *Zymosis*, and the verb from which it is derived, occur in Hippocrates. See a good note and quotation from Galen, by Fœsius, in the *Œconomia Hippocratis*, appended to the Geneva edition (1662) of the works of Hippocrates. *Coction* appears to have been used by the father of medicine with the same qualification as ebullition and fermentation by Sydenham. See his Treatise on Ancient Medicine, vol. i., Œuvres complètes d'Hippocrate, par E. Littré, 1839."

alcoholia. The privation of the various kinds of fluid and food every day required by the organization, gives rise to acute symptoms (such as occurred, for instance, in the shipwreck of the Medusa), or chronic forms of disease, such as scurvy, and the malady that decimated the Millbank Penitentiary; the body, acted on by oxygen, when it can no longer serve for food, becoming a poison to itself, or falling spontaneously into states of disorganization analogous to the effects of poisoning. The special disease arising from privation might be called *penia* (πενια, famine, hunger); from high living, *obsoponia*, (οψοποιος, 'elaborately cooking victuals'); from cold, *psychria* (ψυχρος, cold); from heat, *thermia* (θερμη, heat); without discarding the common terms starvation, scurvy, over-heating, gout, chilblains, frost-bitten (cold?), gangrene, coup de soleil, and some tropical diseases, or replacing the names of diseases which owe their origin indirectly to the excess or deficiency of food and warmth.

"Certain matters which have not yet been analysed produce small-pox, glanders, hydrophobia, syphilis, measles, scarlatina, and other diseases; and as it was before proposed to give names to the well-defined diseases produced by poisons, so, for the purposes of reasoning, it will be equally useful to name these specific matters or transformations of matter by which diseases are propagated either by inoculation and contact (contagion), or by inhalation (infection). The following list exhibits the popular and scientific names of diseases in juxta-position with the proposed names of their exciters; and it may be assumed hypothetically, that in the blood corresponding bodies exist, which are destroyed, and by the transformation of which the exciters are generated or reproduced. The names in the second column terminate in *a*, except a few in *s*. Lyssa (from λυσσα, rabies), the old Greek term, has been restored by Mason Good; I propose, for the sake of uniformity, to call puerperal fever, *metria*; mumps, *parotia*; reserving parotitis for simple inflammation of the parotids; croup, *tracheia*; and the disease from puncture in dissection, *necusia*, (νεκυς, the dead body.)

Diseases.		*Zymotic Principles.*
Small-pox	variola.	variołine.
Cow-pox	vaccinia.	vaccinine.
Glanders	equinia.	equinine.
Hydrophobia	lyssa.	lyssine.
Syphilis	syphil*is*.	syphiline.
Infection in dissecting	necusia.	necusine.
Erysipelas	erysipel*as*.	erysipeline.
Puerperal Fever	metria.	metrine.
Measles	rubeola.	rubeoline.
Scarlet Fever	scarlatina.	scarlatinine.
Whooping-cough	pertuss*is*.	pertussine.
Dysentery	dysenteria.	enterine.
Diarrhœa	diarrhœa.	enterine.
Cholera	cholera.	cholerine.
Influenza	influenza.	influenzine.
Typhus	typh*us*.	typhine.
Plague	pest*is*.	pestine.

"The existence of gangrenine, ergotine, ophthalmine, tetanine, miliarine, diphtherine, parotine, aphthine, tracheine, may also be admitted. It is maintained by some pathologists, that the same specific poison produces several of these diseases; erysipelas, necusia, and metria, for instance; but while the diseases are described as distinct, it will be most convenient to consider their exciters as distinct, although they may be convertible into each other, and be as nearly related as varioline and vaccinine." 200.

Into the theory of hypothesis on which the production of zymotic dis-

eases is attempted to be explained, the writer enters at some length, resting his conclusions mainly upon the older writers, when these diseases were so rife in London, as to divert attention from pure inflammations, and he observes:—

"The early medical observers have directed attention to the analogies zymotic diseases have with combustion, fermentation, putrefaction, and poisoning. These analogies have been, to a certain extent, confirmed by the researches of modern chemistry; amd Liebig has been led by the study of organic transformations—fermentation, putrefaction, decay—to develope a theory invented by the greatest practical physicians to explain the phenomena of zymotic diseases.

"Liebig observes, 'that physicians had referred formerly to fermentation merely by way of illustration;' from which it is evident that he had not had time to consult the English medical classics on this head, or he would have discovered, not, indeed, an anticipation of his own admirable generalizations, but a theory very similar to his own—the basis of their pathology—founded upon enlarged views, and well calculated to prepare the way for his researches and the researches of other chemists." 204.

And again—

"The three great contemporaries, Sydenham, Morton, and Willis, lived in London when plague and epidemic diseases prevailed; and much as they differed, or were mistaken on some points, all announced more or less clearly the zymotic hypothesis. They were not, it must be borne in mind, mere chemiatric theorists; they had studied diseased action as assiduously, and with as much sagacity, as modern chemists have studied fermentation; Willis was a great anatomist; Sydenham and Morton have left original pathological delineations, which have never been surpassed, and laid down plans of treatment which are still followed.

"Liebig, Dumas, and the chemists of this country, will, we sanguinely hope, not rest satisfied with what has been done, but continue to prosecute their labours with ardour and success; and, from the study of the series of transformations of nitrogenous compounds, proceed to investigate the transformations of the blood, tissues, and secretions which accompany the production of varioline, typhine, and the other zymotic principles." 205.

This part of the volume concludes with a note in reply to some observations on the "Report of a Sub-Committee of the Royal College of Physicians in Edinburgh." Mr. Farr very justly remarks.

"There is nothing perhaps in which it would be more difficult to get all medical men to agree than in any one classification of diseases; and though this is partly due to the imperfect state, it cannot be entirely ascribed to the uncertainty, of medical science, for it really arises from the utility, not to say the necessity, of considering the facts in different combinations, according to the object in view. The nosology which was given in the first Report, and of which the present is an extension, has been received quite as favourably as was anticipated: it has been employed, with some modifications, for statistical purposes in this country and abroad. In the present revision I have endeavoured to profit by the friendly criticism of the medical press, and the suggestions with which I have been favoured by members of the profession, who naturally take an interest in a national system of registration." 206.

Into the critique however or the reply we deem it unnecessary to enter, nor indeed will our space permit further notice than to observe that, we think Mr. Farr rightly says he has to thank Dr. Allison and his

colleagues for affording him an opportunity of "giving some explanations and answering some objections against the statistical nosology, which could not perhaps have otherwise been conveniently given or answered here." From this explanation we extract the following statement of the principle of registration adopted.

"The plan in England has been to recommend medical practitioners to return the causes of death under specific names; to distinguish, where they can, all the diseases which are recognised as distinct in the present state of science: to return in general terms the diseases which are imperfectly known, and not to assign any cause without satisfactory evidence of the accuracy of their information. To promote uniformity in the nomenclature, a list of the diseases which are considered distinct in the standard medical works of the day, has been drawn up, and *recommended* for adoption, if the medical informant should consider that the names there given express the cause of death with sufficient accuracy. In the present stage of registration, however, these causes are referred, in the published abstracts, to a much smaller number of heads; comprising the diseases of frequent occurrence, or diseases which it appears interesting, under one point of view or other, to consider apart." 215.

An abstract is given with the tabular returns—showing the state of the public health in 1840. We confess we are at a loss to know why a Report of the Registrar-General published late in 1842 should only furnish an abstract of the public health for the year 1840—or why an analysis and statement is not furnished for 1841, more especially as this volume includes tables of mortality to the 21st of May, 1842, and Major Graham in his report, dated August 8th, 1842, states that,

"To ascertain the state of the public health down to the latest time, I have directed to be prepared a quarterly table of the mortality in 114 of the principal districts (including nearly all the large towns) of England; showing the average quarterly deaths, and the number of deaths registered in the quarter immediately preceding the publication." 19.

Showing that the latest intelligence was considered desirable.

Questions of public health are among the most important that can engage the attention of the medical philosopher—nor is their interest in any sense confined to these limits—inquiries into the causes, physical, political and moral, influencing and determining the public health, are worthy of general attention and study—nay, interest all—the poor by their physical well-being—rate-payers by their pockets—governments by policy—and the enlightened by philanthropy.

The abstract before us shows that there is much yet to be done before a complete registration can be attained. In the year 1840, the supposed causes of 351,757 deaths were stated, leaving 7,804 deaths in which the causes were not stated.

"The mortality by all causes was higher in 1840 than in 1838 and considerably higher than in 1839. Out of 1,000,000 living in 1839, only 21,856 died; while in 1840, out of the same number living, 21,856—and 1,022 more perished. Upon referring to the deaths by different classes of causes, it will be perceived that 626 of the excess (1,022) arose in the epidemic class of diseases; the remaining excess being distributed over all the classes, except that of the violent deaths, which diminished somewhat in each of the two last years.

"The deaths from *Small-pox* fell from 16,268 in 1838, to 9131 in 1839, and 10,434 in 1840; the deaths from *Typhus* fell from 18,775 to 15,666 and 17,177.

From both diseases the mortality was less in 1840 than in 1838, but greater than in 1839. *Whooping-cough* progressively declined from 9,107 deaths, to 8,165 and to 6,132." 218.

Scarlatina, it appears, was the reigning epidemic of the year 1840. The deaths from it in the three years were—

1838,	1839,	1841,
5,802.	10,325.	19,816.

The epidemic was most destructive in the North-western, North-midland, York, Welsh, and Northern Divisions. The epidemic had not terminated at the close of the statistical year.

"The deaths by *Diarrhœa*, *Cholera*, *Influenza*, and *Ague*, increased to a considerable extent; though not so as to assume the epidemic form, or to present anything very remarkable.

"The deaths from *Hydrophobia* in the three years were 24, 15, 22; and therefore not half so numerous in 1840 as in 1838.

"The mortality by the diseases of the *Nervous System* was nearly the same in the three years, *viz.*, ·003365, and ·003255, and ·003302. The mortality by *Cephalitis* and *Paralysis* was slightly higher in 1840 than in the two preceding years.

"The mortality by the diseases of the *Respiratory Organs* was 6 in 1,000; or in each of the three years ·006149, ·005989, and ·006043. The deaths ascribed to *Consumption* in each of the three years were 59,025, 59,559, and 59,923; and the mortality was ·003996, ·003939, and ·003897. The mortality from this disease declined very slightly. About 4 in 1000 persons died annually of Consumption, and about one-fifth or one-sixth part of the total deaths was by this disease.

"The mortality of diseases of the *Digestive Organs* was ·001307, ·001373, and ·001465. The increase was chiefly in *Enteritis*.

"The mortality by diseases of the *Urinary Organs* was ·000112, ·000101, and ·000110, in the three years. The deaths by *Stone* (and *Gravel*) were 320, 299, and 303: the mortality ·000022, ·000020, and 000020. About 1 in 50,000 persons die of stone annually. It will be interesting to see whether the mortality be reduced in future years by the discoveries of surgery. The mortality by *Diabetes* is to that by *Stone* as nearly two to three.

"The deaths in *Childbed* were 2,811, 2,915, and 2,989 in the three years. The mortality increased from ·000190 to ·000193, and ·000195. To about 187 children born alive, *one mother died*. The proportion of mothers who perish at this important period is unquestionably excessive; and must suggest to every humane person the inquiry whether the education of the nurses who attend the poor in labour may not be improved?

"The number of deaths ascribed to *Rheumatism* and to diseases of the joints was 962, and 1170 in 1840.

"If we except 'Debility,' under which head are included, 'premature births' —'Dropsy' was the most fatal of the diseases of '*uncertain or variable seat*.' The deaths ascribed to dropsy were 12,342, 12,251, and 13,261 in the three years; the annual rate of mortality ·000836, ·000810, and ·000863. It is scarcely necessary to add, that according to the present views of pathologists, *Heart Disease*, or *Nephria*, would in the majority of cases be considered the primary affections. So difficult, nevertheless, appears to be the diagnosis practically, that nearly as many cases of simple 'Dropsy' are registered in the London Hospitals as out of doors in private practice." 218.

An interesting table is given of the relative mortality by different causes in the three years 1838–40. The greatest number occur in the following classes.

Diseases of respiratory organs	92,907
Epidemic, endemic, and contagious diseases,	76,064
Nervous system	50,768
Organs of Digestion	22,325
	242,264

There are three other large classes in which the information is more vague and probably less to be depended upon, viz.

Diseases of uncertain seat	48,396
Old age	36,793
Deaths ascribed to external causes, cold, violence	11,922
	97,111
Deaths above specified in four classes . .	242,264
	339,375

Total number of deaths returned by all causes is. . 359,561
339,375 } These two divisions therefore leaves

only. . 20,186 to be accounted for by the remaining six classes enumerated.

And of this 20,000, the causes are not ascertained in nearly 8,000.

We take our leave of this volume, which we may safely affirm, from its very moderate bulk, contains more valuable information, and affords more abundant materials for thought and inquiry of the most useful kind, than a very large proportion of the books which issue each season from the press could yield, were they all put together, and winnowed of their chaff. With this opinion we need not say that we strongly recommend it to the study of the profession generally, whom it behooves more especially to be well informed, on all subjects touching the public health, and heartily do we concur in the hope expressed by the Registrar-General at the conclusion of his Report.

"I hope that the registrars and informants will not fail to see the necessity of attending to the classification of fatal diseases, which has been framed for their use with much labour and after careful consideration; and I also trust that the members of the medical profession, who have hitherto given their aid, will cordially assist in carrying out this national registration of the causes of death; as they alone are enabled to give a correct statement of the nature of the fatal diseases; and to them, more than to the members of any other profession, must be apparent the vast importance of thus collecting accurate materials for advancing the science of vital statistics." 24.

AN EXAMINATION OF THE MEDICAL REGULATIONS COMMONLY CALLED THE MEDICAL BOON, &c. &c. dated July 16th, 1842. By MADRAS MEDICAL OFFICERS. London, 1843.

MANY a good cause has been sadly damaged by injudicious advocacy. It is a recognised rule with all right-minded and prudent men, when they would make an impression upon their superiors, to eschew the slightest approach to disrespect. The authors of this silly pamphlet would seem to be guided by a very different principle. They rely, not upon strong facts, but strong language, to carry the points at issue between themselves, and their honourable masters. The foolish instinct of insubordination and disrespect is so strong in them that it breaks out even in the motto upon their title-page, by which they would insinuate that the masters whose salt they have eaten, and are still eating, for aught we know to the contrary, are upon a par of honesty with the highland freebooter, Rob Roy. The next time they are inclined to discuss matters that have at least a claim to be considered in a temperate and gentlemanly spirit, we would recommend to their attention for a motta a distich quite as suitable and a little older than the verse of the venerable Wordsworth—

> "Ah wud some power the giftie gie us
> To see oursels as others see us!"

The production we are now very reluctantly constrained to notice, has originated in a sentiment of alarm among those whom it chiefly concerns, lest the Marquis of Tweeddale should fill up vacancies in the grade of superintending surgeons, not after "the good old" seniority plan, but upon the newly-acknowledged principle of qualification for the office. Does not this look awfully like a vivid consciousness of demerit upon the part of the Medical Repealers? Why otherwise should the very idea of merit, and not mere length of service, excite such apprehensions, unless there was a consciousness of their liability to be brought to a balance in which they might be found wanting? Admitting that the authors of this pamphlet have some just cause of complaint, let us see how they acquit themselves. They thus introduce themselves to our attention:

"A NUMBER of Madras Medical Officers having examined, with much care, the new Medical Regulations commonly called the 'Medical Boon'—are of opinion—1st. That the enactments of these regulations are at variance with those principles of strict honour, and integrity of purpose, which hitherto have always formed a distinguishing feature of that Court's orders, on all questions relating to the army; and, 2ndly. That they are so defective in those attributes of wisdom and correct judgment which have ever characterised its awards in all matters of the kind submitted for its decision, that we are forced, almost in spite of our conviction to the contrary, to adopt the opinion, that absolute purity of motive did not actuate the framers, nor preside at the council table at which these orders were passed."

Further on, we have these *officers* thus decorously expressing themselves:—

"That order, as emanating from a body of sensible, well-informed, and edu-

cated men, we unhesitatingly pronounce alike disgraceful to them, and humiliating to us as professional men and gentlemen."

If the bitterest enemy of the medical service could wish to injure it in the most serious manner, he could not have hit on a more ingenious mode of doing so, than by exciting foolish members of it to write in this fashion respecting grievances real or supposed. It is with feelings of unfeigned pain and regret that we read the passages cited. They might be palliated in an ephemeral print upon the spot, as a passing expression of excited feeling on the part of some individual, "a triton of the minnows," vain of his supposed capacity to produce a storm in a puddle;—viewed, however, as a commodity for exportation, and as a deliberate attempt to set the Thames on fire (the pamphlet is printed in London!), we do not know which predominates, our amazement at the vulgar folly of the perpetrators, or our disgust at their exceeding bad taste. To suppose that such sentiments or language as we have given specimens of, could by any possibility emanate from the Madras Medical Service, would be a libel upon a highly honourable body. They, when called upon to comment upon any measures of the Government, would be scrupulously guarded to express themselves in language becoming officers and gentlemen. The production before us, then, must by no means be considered as representing the sentiments of the Madras Medical Service, but as the ebullition of a small clique of malcontents, dissatisfied, and not without very cogent reasons, we dare be sworn, with the new order of things, which interferes sadly with "the good old rule, the *simple* plan," (exceedingly simple!) of allowing worthless blockheads to lord it, administratively, as chiefs in military circles of superintendence, or divisions of the army; without any reference to qualifications, or rather the *dis*qualifications, they might possess for the important duties of the office.

The pamphlet is not only written in a bad and invidious spirit, but it is ill-timed, to say nothing of its being fraught with ingratitude.* It comes immediately upon the heels, as it were, of a solid and real boon, let these malcontents say what they will, and is thus calculated, not only to make the Court of Directors and Board of Control regret that they took so much trouble to do a thankless thing, but to make them determine that this should be their final measure of amelioration, and that, however inclined previously to modify what might be pointed out to their satisfaction to be an omission or defect, they would take their stand upon it, defects and all. We say it is calculated to produce such a result, but we trust they know their medical servants better than to suppose that they could, as a body, be cognisant of such an insult to authority, much less sanction it with their approval. As the French politician said, the pamphlet is worse than a crime, it is a mistake—for much that is true in it, (and others have urged these truths over and over again,) is in such close juxta-position

* The Boon obtained for the Indian Medical establishments, by Mr. Martin, confers on Surgeons, who formerly had but a retiring pension of £191. annual pensions of £300.—£365.—£500, and £700. What will our English readers think of the Indian manner of receiving so considerate and munificent a grant!

with what is puerile, vulgar, and insolent, as to render the first utterly ineffective—and so we dismiss it.

The Medical Establishment of the three Indian Presidencies undoubtedly laboured under several disadvantages (and partly do so still), partly caused by the force of changing circumstances, partly by the clogging tendencies of time, partly by the naturally slow movements of reform, and partly by misconceptions on some points in high quarters. Various memorials from time to time were submitted on the subject. There is, it is to be feared, a natural reluctance in the human mind to entertain complaint even when it is just. When much press of other business prevails, this inertness to the consideration of complaint, especially when pertinaciously reiterated, will rather grow than diminish. If this be the case with individuals, it is still more so with collective bodies. He who is well acquainted with the machinery of the India Boards can readily understand how a memorial may slumber in their bureaus; this may be more emphatically said of *medical* memorials in departments where a vast aggregation of subjects considered of much higher interest may be pressing for decision, add to which that such memorials rarely if ever receive a cordial, thorough, and earnest momentum from the local governments. This we say advisedly, and more in sorrow than in anger, for the medical service owes but little to the personal good offices of Governors-General or their Secretaries. We say it then, but not at all in a querulous spirit, that all medical memorials and all that related to the medical class and its bearings, and reactive results on military combinations, have hitherto been deemed of far more secondary importance than they deserved. Indeed it had been well for the service and well for the state if an individual, who had attained experience in India in the medical service, and who commanded the respect, not only of his own corps, but of his fellow servants in the civil and military departments, and possessing a sufficient knowledge of business as well as tact, temper and judgment, had been always attached to the India House as medical secretary. The appointment of such a functionary would be some security to the service that their interests and claims would not be unsympathisingly overlooked, or coldly slurred over with an official put off on the part of a purely civil or military secretary. All claims in every public department whatsoever require a certain degree of personal influence and energy to impel them through that stagnation that so easily besets them. Fortunately for the Indian Medical Services, though "neither at home nor abroad are their interests represented in the councils of the state," their claims at length found a more efficient fulcrum and lever to move them than their mere abstract value in the opinion of men in office. An individual of their own body but possessing that independent status, morally and socially, without which no man will be listened to in high quarters, be his abilities what they may, generously stepped forward to advocate the cause of his brethren before the India Board. Mr. J. R. Martin has fared like too many reformers. He has not reaped as he sowed, and if there be many (which we cannot for the honour of the Services believe) of the Madras pamphleteers' opinion, then is Mr. Martin likely to be less thanked than blamed for his laborious, unrelaxing, and successful efforts in procuring the Medical Boon for a body to which he no longer belongs. But for these efforts, we can inform our readers as a fact

they need have no doubt of, the Boon would have been still a thing not that is, but that might perchance be at some future epoch. Let any man but just try to move bodies like the India Boards, and he will then, but not till then, be qualified to understand the amount of personal trouble Mr. Martin went through in effecting an object from which he has derived not the slightest personal benefit, though he has been the active, judicious, and able instrument of conferring much upon a whole service of which he was so truly distinguished a member.* No candid member of that service can deny that it required a renovation of spirit and an amelioration of tone. Mr. Martin's views as to what concerned the real respectability and honour of the service were as wide as the poles asunder from those propounded by such writers as we have alluded to. In his statement of the general subject submitted to the India Chairs, he clearly set forth the condition of the medical service in the following terms.

"While the organization of the Indian Army has been variously and advantageously modified of late years, upon these improvements, the suggestions of experience which have been adopted in the Royal Service, that of the Medical Department remains stationary; and up to this hour it is deemed to have no claim to any other mark of distinction than is included in the mere routine of promotion by seniority:—in fact, the stagnation of this anomalous principle weighs upon it with a peculiar and deadening effect—especially in Bengal, where promotion is so far more slow than at the other Presidencies. The great body of the service—debarred the legitimate expectation and hope of rise or distinction, beyond such as belongs to a name borne so many years on the muster-roll—rather than to a character for knowledge, activity, and discernment—droops and stagnates—so as, after a time, to lose that salutary zeal which prompts to those exertions that, in all other services, secure a just and honourable reward.

"Disadvantages press on every grade of the service; they comprise exclusion from the honours and privileges attached to military advancement, though medical officers be equally exposed with their military brethren to the most pressing dangers of Indian service, as evinced by the numbers

* "When Mr. Martin presented himself at the India House in support of the extension to his brother officers of the pension increasing according to length of service, and of the abolition of seniority as a ground for staff promotion—a ground as unwise and injurious in itself as opposed to the standing orders of the Bengal Army—he was received with the utmost attention and consideration by every member of the Direction. His demands were just, and they were readily conceded.

"It was another affair to obtain even a hearing from the Indian Minister of the Crown.

"Here he had to contend with difficulties and delays of a nature impossible here to relate, for a whole year; and when these had all been overcome, and the Minister satisfied and ready to act, a change of parties in the State took place, whence another year, more delays and difficulties, and more explanations were required. The New Minister, however, like the former, satisfied himself of the entire justice of the demands made upon him; but it is not too much to say that, but for the laborious and persevering exertions of Mr. Martin, no boon whatever would have been obtained for many a long year to come."

that fell in the Burmese, Affghan, and Chinese campaigns, as well as in the earlier campaigns of Lord Cornwallis—a low military rank—a too low rate of retiring pension, as well as the want of a greater number of grades; in short, the entire Service demands a re-modelling, to keep pace with the general improvement of the Indian Army, and to assimilate it to the medical service of Her Majesty's Army."

Mr. Martin testifies to the value of the seniority principle in a passage which forcibly illustrates its working, and the allusions of which we know, not from vague hearsay, but from personal experience, to be founded on facts notorious to all who are acquainted with the history of the service (at least at one Presidency) for the last thirty years.

"Promotion to offices of trust should no longer be granted on the seniority principle. To demonstrate the truth of this cannot be necessary, after what has been already stated; but I may as well mention that, in Bengal, an individual of little worth, whether regarded as a medical officer or a gentleman, may now look upon it as certain that, provided he survive his contemporaries, he shall rise in due time, not only to the superior staff employs, but to the governing head of the service; and thus have risen within the writer's recollection, not once, but frequently, the mere merchant, the confirmed gambler, and the exhausted tippler."

"The depressing influence of such a system, is not to be told; and it ought to be henceforth a rule of the Service that no officer, but one of the highest character, moral and professional, should ever rise to such offices: and experience, with approved service with the troops, both in the field and in cantonment, ought to be a qualification in no instance to be dispensed with."

On the appointment to his high office of the Director-General of the Army, we learn* that he received the following instructions from the Commander-in-Chief.

"All promotions and appointments in the medical department of the army to be recommended by you to the Commander-in-Chief.

"You will in your recommendations for promotion be governed by the usual rule of seniority *as far as in your judgment* circumstances will permit.

"You will *select* and submit for the Commander-in-Chief's approbation all officers and persons to be employed in the medical department abroad and at home."

Let us hear what the same eminent person says in regard to his principle of selection to the higher offices of the Army Medical Department, "the course of promotion in which is regulated throughout upon a principle of selection."

"Unless by the proceedings of a Court of Inquiry or of a Court Martial, there appears anything to warrant an officer being passed over, I invariably adopt the rule of seniority in the service, in recommending the promotion of assistant-surgeons to regimental surgencies, of regimental surgeons to staff surgeons, and of staff surgeons to be assistant inspectors of hospitals; *but in recommending to the two higher ranks*, viz. those of deputy inspector-general and inspector-gene-

* Report of the Commissioners for inquiring into Naval and Military Promotion and Retirement.

ral of hospitals, *I find it expedient to adopt a different line. As the officers of those two classes are for general and extensive superintendence* on foreign stations, *I think it right to make a selection,* and *to recommend* (from the knowledge I possess of the merits and talents of all) *an officer who unites, with a thorough knowledge of the service, and of the professional duties, talent for arrangement, and habits of business, together with discretion, discernment, and conciliatory manners, and who can from his character in the service command the respect of those acting under him.*"

These are precisely the principles upon which Mr. Martin and all enlightened well-wishers of the Indian Medical Service at large are anxious to see it administered. Let us also turn to the testimony of a Madras medical officer of a *very* different stamp indeed from those we have been reluctantly compelled to quote—one whom it is a privilege and a source of pride to all who have served in India to hail as a *brother officer.* Mr. Annesley states:—" that it is quite impossible the neglected and degraded state of the medical profession in India can have escaped the notice of the most common observer:—that he has long been of opinion that so lamentable a state of things can only have arisen from inefficient administration, caused by a seniority system of promotion—a system, he regrets to say, which has infested the service from the earliest times—even before the institution of Boards in 1786:—that in these times too, a very inferior class of officers were admitted into the service, and gave to it a low tone:—that though there were, at the same time, some individuals of high character and repute, the bad and inferior vastly prevailed:—that, therefore, it is no matter of surprise to find a department that ought, from its paramount importance to the welfare of armies, to stand high in order and estimation, suffered the most serious deterioration:—that, on the other hand, it is matter of wonder how a Government, which could not be ignorant of the defects of the service, should, nevertheless, and with such materials, have adopted a system of promotion and administration, for the medical department, at variance with every other department of the service; for instance, the members of council, of military boards, of boards of revenue, and of trade, have ever been selected officers:—that seniority was never thought of but in that department alone wherein it was calculated to do most injury to the public service:—that a system which takes for the control and management of a great department, three men, just as they stand in seniority order—no matter what their character or qualification—cannot be otherwise than bad, as it is quite impossible that any number of men taken consecutively shall possess the professional character, energy, and administrative talent necessary to the welfare of an army:—that officers with all necessary qualifications can however be found, at all times, and in the required numbers, by another system, that of selection:—that public departments always take their tone from their heads, and that the efficiency with which business is carried on depends entirely on these heads:—that if discretion and energy be wanting at the head, the details of every branch must of necessity be badly conducted:—that it is so, and has long been so, in India:—that the Board of Madras was governed by such feelings that no person could have confidence:—that they showed no knowledge of their profession:—that in his time the members themselves were quite aware of all this:—that the

entire system adopted by the Board was confessedly bad:—that when the Board did possess power and patronage, it was used, never from public considerations, but from private views:—that men of worth and talent were neglected, while the idle, the careless, the most indifferent, and the most ignorant, were protected and promoted:—that, in short, cringing, idleness, neglect, and ignorance, had a better chance, under the Board, than talent and industry:—that, through this depraving system, he has known officers become 'old Indians, with all their follies, before they had been two years in India:'—that the chief boast of the members was the number of years they had lived in India:—that so unworthy was the conduct of the Board, in the important matter of patronage, that this power was obliged to be withdrawn by a special and direct order from the Home Government:—that, however respectable in private life some individual members, Boards constituted like those of India, never have, and never can command the confidence of Government, the respect of the services, or of the profession at large:—that in truth they degrade the profession, and injure the Service:—that it is hoped the recent improvements in the pensions and in the mode of promotion, ordered by the Home Government, will prove beneficial, if the latter be rigorously and systematically acted on:—that whatever the Indian medical services may formerly have been, there were amongst them, and there are now in greater numbers, men of as high a character for talent and experience, as in any public service in the world:—that from such men as these the most efficient staff might at all times, and may now, be selected:—that it is only because men of an opposite character have hitherto been placed in the higher stations that the whole establishment has been contemned, underrated, and undervalued."

"That, after a full and careful consideration of the whole subject, Mr. Annesley would recommend that the medical services of India be made immediately to approximate, as nearly as possible, to that of Her Majesty's army."

It is requisite, for a full understanding of the subject, to give here Mr. Martin's closing summary in his statement to the Chairs of what he conceived the Indian Medical Service required.

1st. That pension, according to length of service, be extended to the medical service of India, the same as granted to the officers of the Indian army, and as accorded by the British Government to the medical branch of the Royal Army; also, that the superior medical officers be entitled to their pensions from the date of their respective commissions, in common with the military officers in India, and with the medical officers of Her Majesty's Service.

2d. That honours and rewards, proportionate to its services and experience in actual war, be awarded to the Indian Medical Department, and such as are granted to the medical branch of the Royal Army.

3d. That grades similar to those of the Royal Service be established in the Medical Department of India, and that the Governments be no longer limited in their selection for staff and other medical officers to mere seniority; but that, after the prescribed period of seventeen years' service, all officers of character, and who may have served with credit with troops in the field, be eligible to the higher staff and other employ-

ments; professional character, and military experience in actual service, being indispensable.

4th. That no medical officer, of whatever rank, be allowed to continue longer than three years at a civil station, or in civil employment of any kind, with the exception of large cities, as already mentioned.

5th. That the very injurious custom hitherto prevalent, of permitting officers to resign the active branch of the service, still holding for life staff and other responsible offices, be discontinued; and that, for the future, all such as desire to abandon the active duties of the profession be struck off the effective list, and transferred to the Invalid Establishment.

Of these proposals only one, the first, has been carried out, and even that not completely. The original Draft of the Boon, as laid down in the document forwarded by the Military Committee of the Court of Directors to the Board of Control, included a pension of £250 a year after 24 years of service, three for furlough included, but the Controlling Board drew a pen through it, *why* is best known to the Board itself. A service of 17 years in a Tropical climate is so long that, with the changed and changing notions and circumstances of the present day, when steam communication affords a speedy transit to their native land, many will prefer to retire at once, and looking to a cheap residence abroad, or some employ in addition to their pension at home, to the risk of staying on for eight years longer before getting the higher rate of pension. Accordingly some of the ablest men in the service have retired and contemplate retiring before that period, of whom Mr. Martin himself is a striking example.

On the alleged indefeasible "right" to be promoted by "the good old rule, the *simple* plan," of the muster-roll, and on the actually indefeasible "right" of the Honorable East India Company to make what rules and regulations they may please for the promotion and administration of their services, we have said nothing—deeming such discussion a waste of time and of words. Whatever "the good old rule, the simple plan" of rising to seniority honours in the Medical Department of the South may have been, we can assure our brethren there that, to the North and East of them, a less absolute rule has long existed, though unhappily, as Mr. Martin states, it has been allowed to remain a dead letter. But here is the rule:—

"The Governor-General in Council deems it proper to declare, with reference to the principle established by the existing regulations of Government on the subject, and of the great importance of the duties to be performed by superintending surgeons, that the succession to such appointments will not depend on seniority alone, but that the selection will be made with reference to established character for distinguished zeal—strict assiduity, and professional ability, due regard however being had to seniority where not opposed by considerations of a still more powerful nature."—*Bengal Medical Code, Chap.* 1, *Section* 2, *Paragraph* 2.

I. ORGANIC CHEMISTRY, IN ITS APPLICATIONS TO AGRICULTURE AND PHYSIOLOGY. By *Justus Liebig*, M.D. &c. Edited by *Lyon Playfair*, Ph. D. 8vo. pp. 384. London: Taylor and Walton.

II. ELEMENTS OF AGRICULTURAL CHEMISTRY AND GEOLOGY. By *J. F. W. Johnston*, F.R.S. 12mo. pp. 250. Blackwood.

IT needs not we should think, any argument to prove that it is absolutely necessary for medical men—if they expect to maintain that position in educated society which their profession may justly challenge, and which moreover all classes seem very willing to concede—to keep themselves up to the level of the existing state of science, especially of those branches of it which more immediately appertain to the general course of their studies. Chemistry is one of these, and a most important one it is; Botany, and indeed all natural history, is another; comparative Anatomy and Pathology (veterinary medicine) is a third; Geology and Meteorology are a fourth. A competent knowledge of these pursuits—besides throwing a dignified grace around the character of every man—will tend to correct many errors into which the unceasing occupation in the daily duties of his profession is apt to lead the practising physician; it will accustom him to take broad and comprehensive views on every question that is submitted to his notice, by enabling him to compare a multitude of facts with each other, and by teaching him to observe the mutual dependence and reciprocal action of the different objects in nature, and of the varied, though harmonious, agencies that are continually at work throughout its several kingdoms.

The great discoveries of medical science have all been made by men who were accomplished philosophers as well as eminent practitioners: we have only to point to those of *Harvey*, *John Hunter* and *Jenner*. It is a very vulgar mistake to suppose that a due attention to matters of science, or even to the accomplishments of Literature, is at all incompatible with a most assiduous and successful pursuit of active practice. It is far otherwise; the mind requires to be refreshed and enlarged by diversity of occupation to enable it to persevere with energy in its accustomed duties; and he, we may be assured, will generally make the best practical man, who can withdraw himself at intervals from the toil and turmoil of his daily occupations, and find a grateful refuge amid the pursuits of an enlarged and varied philosophy.

Medicine, it should be remembered, is, strictly speaking, one of the branches of physical science, and deserves to be studied and examined quite independently of its practical application to the relief of suffering. There are laws, no doubt, which regulate the development and the diffusion of diseases, just as there are laws which preside over the various changes and fluctuations of the ocean and the atmosphere. Who can look back upon the strange march of the pestilential Cholera ten years ago—starting from the fervid fields of India, and stalking on with slow but steady march across the steppes of Tartary to Russia, Denmark, Prussia, France and Britain; then traversing the broad Atlantic, and, after striking terror into

the inhabitants of the New World, returning once more to Europe to visit its southern shores—without feeling the truth of this position? And if this be the case with the Cholera, so it is with almost all epidemic and with many endemic diseases: their origin, their progress and their decline are, we have every reason to believe, owing to the operation of certain physical agencies which are at work throughout the whole system of the universe, and the discovery of which, (though they are but imperfectly appreciable by us,) may yet reward the labours of some future inquirers.

But let us not be led away by any general disquisition from the more immediate object of the present article, which is to take a rapid survey of the great general truths of Vegetable Chemistry, and to point out the most striking relations that exist between the two kingdoms of living nature, animal and vegetable beings—their mutual dependencies, their reciprocal actions, the sources whence they derive their elementary constituents, and the changes which they are constantly producing in the inorganic world around them.

There is not a greater marvel in the whole range of physical science than the fact of the countless diversities in the form, structure and visible appearances of organised matter contrasted with the elemental simplicity of its constitution. When we learn that every part of every plant and of every animal—from the moss to the cedar, and from the monad to man—is made up of but a few simple ingredients, and that all the exquisite machinery of their framework is composed of, and ultimately resolvable into, a little carbon and hydrogen, oxygen and azote, along with some saline or earthy matter, we feel from the first moment the utter hopelessness of ever being able *fully* to understand how these things can be. But although a dark veil hangs over such mysteries, we shall not be without our reward, if we will submit patiently to inquire and attentively to examine; for certainly most wonderful are the truths that have already been discovered. How marvellous the one fact that it is from the very dust of the valley, and from the air which we breathe, that there are produced and sustained all the glorious mechanisms of animal and vegetable life!

Independently of, but nevertheless in beautiful accordance with, the disclosures of revealed Truth, one of the earliest facts that arrests our attention is, that the creation of vegetable must necessarily have preceded that of animal beings. The former are designed to prepare the way for the very existence and support of the latter. No animal, we have reason to believe, can derive nourishment from or live upon inorganic substances; these may serve indeed to appease the cravings of hunger, but they cannot afford any supply of nourishment to the creature. Plants are manifestly the intermediate link and bond of connection between the animal and the mineral kingdoms of nature. They are endowed with the power of transferring the brute elements around them into organised productions; they suck in water and absorb atmospheric air, and, after decomposing them, they recombine their constituents in various modes, and thus assimilate them with the very texture and framework of their own systems. At the same time they associate unto themselves a certain quantity of earthy matter from the ground from which they spring—different alkaline and metallic salts, which are not only necessary for their own complete development, but are afterwards destined to become essential ingredients of ani-

mal bodies. Whence, for example, is the earthy matter of the bones, the various salts that abound in the urine and other fluids, the iron that is always present in the blood, &c. to be derived, except from the food on which the animal lives? Now (thanks to the discoveries of vegetable chemistry) all these substances can be proved to exist in the constitution of plants; and these, as we shall afterwards shew, obtain them all from the soil on which they grow. We thus at once perceive the necessity of our extending our inquiries beyond any one department of Nature's works, if we hope to arrive at a philosophic knowledge of its phenomena. This holds true especially of Animal Physiology; no rational system of this beautiful science can be constructed without a continual reference to the organisation and functions of plants.

Many, we know, entertain a vague and undefined idea that a living body has some mysterious power of generating or creating within itself some, if not all, of these substances to which we have been alluding; and certainly, until chemical science had attained that degree of exactitude to which it has reached only within the present century, it was scarcely possible to form even a probable conjecture as to the manner in which they were obtained. But this uncertainty is now past; for we know by the most undeniable experiments on the one hand, that there is not an element which enters into the constitution of an animal body, that does not exist in plants; and on the other, that there is not an element in the latter that cannot be proved to be derived from the mineral or inorganic kingdom. How emphatically true then is it of every living thing, that "dust it is, and unto dust it shall return." The decay of one generation serves but to supply the elements for the development and growth of a succeeding one; there is a constant and ever recurring cycle of life and death, of formation and dissolution; what was active yesterday is to-day returning to its primal elements; and the very dust, that we trod upon an hour ago, is already becoming incorporated with a living frame, and will ere long be instinct with vitality.

The first question we propose to examine is the very curious one as to the source from which plants derive the various elements that enter into their composition.

We begin with *Carbon*. This elementary substance, it is well known, enters very largely into the framework of all vegetable matter. Its proportion however, varies very greatly in different substances; as much as from 20 up to 80 per cent. We shall not perhaps exceed the truth if we state, in round numbers, that nearly one-half of the whole vegetable matter in the world consists of carbon or pure charcoal—a startling and seemingly at first an inexplicable announcement. Whence is it all derived? Hitherto it has been generally supposed that by far the greatest portion of this most necessary ingredient is obtained from the ground; and the language in common use has tended much to give rise to, and to perpetuate, this opinion. We talk of the rich and nutritious properties of certain soils, just in the same manner as we do of the fattening and restorative qualities of certain articles of food and drink to animals.

But there is a mistake in all this; for it is now ascertained, beyond a doubt, that no matter already organised can become assimilated with the

substance of a living plant, unless it (the organised matter) has been previously resolved into its elementary constituents. Plants, as we have already remarked, live essentially and invariably on inorganic materials; and, when rich vegetable or animal manure is supplied to them with the view of promoting their speedy or exuberant growth, such substances act not by yielding any direct supply of nourishment, but only by facilitating certain changes and chemical decompositions, which we shall endeavour to explain as we proceed.

The Carbon of plants is derived in part from the earth, but chiefly from the atmosphere. The well-known circumstance that many plants thrive admirably well in water, and others in the air itself, affixed but by a filament to another plant, is almost a sufficient proof in itself of the truth of this assertion.

Few persons ask themselves, how do such plants obtain the nutriment that is necessary for their continuance and growth; or what is the source from which they obtain the large amount of carbon that they must have for the formation of flowers, and leaves, and branches? Is it the water, or is it the air? That it is not the former, we need not say to any one acquainted with the elements of chemistry; and that it is the latter, we shall now endeavour to show. It will be useful first to recall a few circumstances connected with the constitution of the atmosphere, before we proceed.

It is well known that atmospheric air is almost uniformly the same in composition in all places, seasons, and circumstances: the air, that has been collected at the height of 15 or 18,000 feet, is found to be quite similar to that at the surface of the earth; and what was present in jars buried for 1,800 years in Pompeii, contained the same elements, and in the same proportion, as that of the country in the present day. That there must be some great and marvellous agency at work, by which the constant waste of its oxygen is supplied, and by which the no less constant supply of carbonic acid is withdrawn, is therefore quite obvious. Now the beautiful researches of late years have shown that it is the vegetable world that acts as the great purifier of the atmosphere for the respiration of animals: and, on the other hand, that it is the very change effected by this function in animals which furnishes the great supply of food for the growth of plants.

Every cubic foot of oxygen, consumed in respiration, is supplied by an equal volume of carbonic acid; and vice versa; every volume of carbonic acid, decomposed by vegetables, is replaced by an equal volume of pure oxygen. Keeping these facts in remembrance, let us now proceed in our inquiry, and see whether the air *can* afford the necessary supply of carbon to the vegetable world.

This question, says M. *Liebig*, is very easily answered.

"It is known, that a column of air of 2216.66 lbs. weight, Hessian measure, rests upon every square Hessian foot of the surface of the earth; the diameter of the earth and its superficies are likewise known, so that the weight of the atmosphere can be calculated with the greatest exactness. The thousandth part of this is carbonic acid, which contains upwards of 27 per cent. carbon. By this calculation it can be shown, that the atmosphere contains 3,000 billion

Hessian lbs. of carbon; a quantity which amounts to more than the weight of all the plants, and of all the strata of mineral and brown coal, which exist upon the earth. This carbon is, therefore, more than adequate to all the purposes for which it is required. The quantity of carbon contained in sea-water, is proportionally still greater." 22.

We have not deemed it at all necessary to *prove* that plants have the power of decomposing carbonic acid; for the fact is so easily shown. We have only to put a few fresh leaves in water containing carbonic acid, and expose the vessel to the sun's rays. After a short time, all the gas will be found to have disappeared from the water; and, if the experiment has been conducted under a glass receiver filled with water, the oxygen gas may be collected for examination. Plants do not emit oxygen in water that is not impregnated with carbonic acid, or which contains any alkali that may protect the acid from decomposition.

The quantity of the one gas decomposed, and of the other evolved, is uniformly in proportion to the intensity of the solar light to which the plant is exposed, and to the length of time it remains so. Hence, as our author beautifully remarks—

"The proper, constant, and inexhaustible sources of oxygen gas are the tropics and warm climates, where a sky, seldom clouded, permits the glowing rays of the sun to shine upon an immeasurably luxuriant vegetation. The temperate and cold zones, where artificial warmth must replace deficient heat of the sun, produce, on the contary, carbonic acid in superabundance, which is expended in the nutrition of the tropical plants. The same stream of air, which moves by the revolution of the earth from the equator to the poles, brings to us in its passage from the equator, the oxygen generated there, and carries away the carbonic acid formed during our winter." 24.

When the light of day ceases, the decomposition of the carbonic acid in the atmosphere by the vegetable world no longer goes on, and oxygen is, therefore, no longer emitted. Indeed, the very reverse of this seems then to take place; for plants are found actually to give out carbonic acid, and sometimes also at the same time to absorb oxygen during the night. This curious fact has been long known to vegetable physiologists and to chemists; but we are not aware that any one has ever taken the same view of it as M. *Liebig* does. It has been generally imagined that this evolution of carbonic acid, and absorption of oxygen during night, by plants, was a true process of respiration in them, similar to that in animals, and like it, having for its result the separation of carbon from some of their constituents. But this idea is, according to our author, quite a mistake; the process in question being, in fact, much rather of a simply mechanical, than of a truly vital, nature. The following is the explanation he gives of it.

"The carbonic acid which has been absorbed by the leaves and by the roots, together with water, ceases to be decomposed on the departure of daylight; it is dissolved in the juices, which pervade all parts of the plant, and escapes every moment through the leaves, in quantity corresponding to that of the water, which evaporates." 32.

.. .. "A cotton wick, inclosed in a lamp, which contains a liquid saturated with carbonic acid, acts exactly in the same manner as a living plant in

the night. Water and carbonic acid are sucked up by capillary attraction, and both evaporate from the exterior part of the wick."* 33.

So much for the cause of carbonic acid being evolved in the dark; the process seems to be, so to speak, a mere act of evaporation, and has nothing to do either with the respiration or with the nutrition of the plant.

But then it may be asked,—admitting this manner of interpreting the disengagement of carbonic acid during the withdrawal of the solar light, how do you account for the absorption of oxygen at the same time? M. *Liebig* considers this process to be the result of a genuine chemical action between the gas in question, and certain of the organic constituents of the leaves and other parts of the plant—an action, he says, that is quite independent of life, as it goes on in a dead plant, exactly as in a living one. Whenever they (the leaves, &c.) contain either volatile oily matter which has a tendency to change into resin, or some other compound in which nitrogen is present, (as in nut-galls), it is found that the absorption of oxygen is much more active than under any other circumstances. The following paragraph is so interesting, and withal so full of curious instruction, that we must give it without abridgement:—

"The correctness of these inferences has been distinctly proved by the observations of *De Saussure*; for, whilst the tasteless leaves of the *Agave Americana* absorb only 0·3 of their volume of oxygen, in the dark, during 24 hours, the leaves of the *Pinus Abies*, which contain volatile and resinous oils, absorb 10 times, those of the *Quercus Robur* containing tannic acid 14 times, and the balmy leaves of the *Populus Alba* 21 times that quantity. This chemical action is shown, very plainly, also in the leaves of the *Cotyledon calycinum*, the *Cacalia ficoides* and others; for they are sour like sorrel in the morning, tasteless at noon, and bitter in the evening. The formation of acids is effected during the night, by a true process of oxidation: these are deprived of their acid properties during the day and evening, and are changed, by separation of a part of their oxygen, into compounds containing oxygen and hydrogen, either in the same proportions as in water, or even with an excess of hydrogen, which is the composition of all tasteless and bitter substances." 29.

If this view of the subject be the correct one, (and certainly it seems more than probable,) we at once perceive that the changes which plants produce in the surrounding air,—viz. the evolution of carbonic acid, and the absorption of oxygen—during exclusion from light, are almost quite independent of each other. For, while one seems to be the result of the evaporation of the superabundant juices, the other may be attributed to a mere chemical affinity between a gaseous element, viz. oxygen, and certain matters of vegetable origin, more especially volatile oils, tannin, &c. As a matter of course, we must not at once adopt the new and very ingenious views of the celebrated Professor of Giessen, until they have been tested by other inquirers, and their probability is more firmly established.

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* Whether we adopt this interpretation or not, it is sufficiently obvious that it must be decidedly unwholesome to keep plants in a bed-room during the night. There is certainly no such objection, (but rather the very reverse,) to having them there during the day, provided they are kept in a part of the room where they are freely exposed to the light.

We do not profess to be very scientific chemists or vegetable physiologists ourselves, nor wish our readers to be hasty in admitting the truth of every novelty, however ingenious; but this one thing we would say: there is an *à priori* stamp of probability about the work of M. *Liebig* that strongly disposes us to admit the general truth of its positions, without waiting for further confirmation—and for nearly the same reason that we can often predict of a portrait whether it be a good likeness or not, although we may not have seen the original.

In our own experience we have more than once *felt* the force of this consideration, from the first moment that we got a glimpse of some fine discovery; it carried a resistless conviction with it at once by its beauty, its simplicity, its comprehensiveness, and its power of explaining a number of detached and seemingly dissociated facts, by a simple and easily intelligible principle. On no occasion was all this more emphatically felt, than when we first read Sir *Charles Bell's* papers on the Spinal and Respiratory Nerves in the Royal Transactions; and we must confess that we have experienced something akin to this upon our first perusal of the present work: *mais revenons à nos moutons.*

It is not from the atmosphere alone that plants derive the carbon which enters so largely into their composition. The earth, too, and the rain which falls upon the earth, are almost continually yielding a certain amount of supply—not, indeed, in the form of pure carbon, (for that cannot be absorbed by any plant,) but in that of carbonic acid, which is afterwards decomposed within the body of the plant.

To explain this part of our subject fully, it would be necessary to describe at some length the various changes that go on during the processes of Fermentation and Putrefaction. A few words must, however, suffice for our present purpose.

The decay of all vegetable matter is, in truth, neither more nor less than a slow process of combustion, by which the destructible parts of a plant, combining with the oxygen of the atmosphere, are gradually consumed. Hence the necessity that there is of a constant renewal of air for the continuance of this process. Unless this be the case, the decay will at once be interrupted. The presence of a certain degree of moisture is no less needful to the change; alkalis promote it, while acids retard it; and all antiseptic substances, such as sulphurous acid, the mercurial salts, empyreumatic oils, &c. arrest it altogether. When the woody fibre of plants has entirely lost the property of further decay, or in other words, when it no longer has any tendency to unite with the oxygen of the atmosphere and generate carbonic acid, it becomes a brown coaly-looking substance, to which the name of *mould* is applied, and which constitutes the principal part of all the strata of brown coal and of peat. With this brief explanation, our readers will be better able to appreciate all the interest of the following very instructive passage:—

"*Humus*, (*i. e.* woody fibrine in a state of decay,) acts in the same manner in a soil permeable to air as in the air itself; it is a continued source of carbonic acid, which it emits very slowly. An atmosphere of carbonic acid, formed at the expense of the oxygen of the air, surrounds every particle of decaying humus. The cultivation of land, by tilling and loosening the soil, causes a free and unobstructed access of air. An atmosphere of carbonic acid is, therefore, contained

in every fertile soil, and is the first and most important food for the young plants which grow in it.

"In Spring, when those organs of plants are absent which nature has appointed for the assumption of nourishment from the atmosphere, the component substance of the seeds is exclusively employed in the formation of the roots. Each new radicle fibril which a plant acquires may be regarded as constituting at the same time a mouth, a lung, and a stomach. The roots perform the functions of the leaves from the first moment of their formation; they extract from the soil their proper nutriment, namely, the carbonic acid generated by the humus.

"By loosening the soil which surrounds young plants, we favour the access of air, and the formation of carbonic acid; and on the other hand the quantity of their food is diminished by every difficulty which opposes the renewal of air. A plant itself effects this change of air at a certain period of its growth. The carbonic acid which protects the undecayed humus from further change, is absorbed and taken away by the fine fibres of the roots, and by the roots themselves; this is replaced by atmospheric air, by which process the decay is renewed, and a fresh portion of carbonic acid formed. A plant at this time receives its food, both by the roots, and by the organs above ground, and advances rapidly to maturity." 48.

At this part of his beautiful dissertation, M. *Liebig* alludes to an interesting fact well known to all geologists, but of which no satisfactory explanation has hitherto, as far we know, been attempted to be given. The plants of the primeval world appear (from their remains found in the coal formation) to have consisted chiefly of gigantic mono-cotyledonous ferns, palms and reeds—plants to which nature has given the power, by means of an immense extension of their leaves, to dispense with any great supply of nourishment from the soil. It would seem, therefore, that their roots act but a very subordinate part in their growth. Now the curious fact is this, that while we find in the bowels of the earth vast quantities of fossilized leaves, stems, and fruit, scarcely any traces of the roots of these primæval trees have ever been discovered. What explanation shall we give of this? May it not be that—as there could be comparatively but little mould on the surface of the earth in these primæval days, and as there is every reason to believe that the solar light and heat were then unusually great—the nourishment of the plants, that covered the earth, was effected almost altogether by their leaves, and only in a very inferior degree, if at all, by their roots?

Hydrogen.—The proportion of this element is found to vary considerably in different parts and products of a plant. In *some*, as in lignin, sugar, gum, and starch, its proportion to that of the oxygen present is exactly that in which these two elements combine to form water; there is no *excess* either of the one or of the other.

In *other* vegetable matters, as in oils, resin, wax, &c. the proportion of hydrogen present exceeds that which is necessary to form water with the existing oxygen; while in a *third* set, as in all the vegetable acids for example, the oxygen is in excess, and the proportion of hydrogen is consequently deficient. There are exceptions, we believe, to the uniform accuracy of this ternary division of vegetable substances and productions; but for general purposes it is sufficiently correct.

That the Hydrogen of plants is derived from the decomposition of water, is admitted by all inquirers.

"The process of assimilation," says our author, "in its most simple form, consists in the extraction of hydrogen from water, and carbon from carbonic acid; in consequence of which, either all the oxygen of the water and carbonic acid is separated, as in the formation of caoutchouc, the volatile oils which contain no oxygen, and other similar substances, or only a part of it is exhaled." 66.

The influence of solar light, in aiding the decomposition of water and the exhalation of its oxygen, is apparent from the well-known facts, that, 1, in this country, when the Summer is unusually gloomy and cold, fruits never ripen thoroughly, but remain more or less sour, (in consequence of their acid matter not being converted into sugar); and 2, that a large proportion of tropical trees abound in oils, caoutchouc, and other substances, which contain very little if any oxygen. Such vegetable productions have little or no tendency to decay or putrefaction; and for this simple reason, that their chief constituent has a very weak disposition to combine with the oxygen of the atmosphere.

Nitrogen.—It was long supposed that this element was contained in very few substances of vegetable origin, and that its presence was confined almost exclusively to those of an animal nature, and was thus in some measure a mark of distinction between the two kingdoms of nature. It is now, however, well ascertained, that it is much more largely diffused through most plants than was imagined; and although, when estimated by its proportional weight, it forms but a very small part of their composition, it is (says M. *Liebig*,) never entirely absent; for, even when it does not absolutely enter into the composition of a particular part or organ of a plant, it is always to be found in the fluids pervading it. Of all vegetable substances, it is most abundant in albumen and gluten, and in all the organic bases or alkaloids, such as morphia, strychnine, &c.

Whence is the Nitrogen of plants derived? The opinions of M. *Liebig* on this subject are among the most interesting novelties of the work before us. He shews, in the first place, that there are many good reasons for believing that this element is never obtained from the atmosphere—at least directly, and in its simple uncompounded form. What then is the probable source of it?—this is the point we shall now endeavour to explain.

There is a substance very widely diffused throughout nature, capable of existing in a variety of conditions and of entering into a variety of combinations, having a strong affinity for carbonic acid, emitted from almost every body in a state of decomposition, very volatile and at the same time very soluble in many of its forms, present in the air around us, in the rain that falls on the ground, and in the waters of the ocean; and of this substance, nitrogen (existing in a readily separable or loosely combined condition) is a large constituent. Need we add that this substance is Ammonia?

When we consider that there is a constant and unceasing evolution of it in the state of vapour, springing from the decomposition of animal

matter at almost every point of the earth's surface, we may form some idea of the enormous aggregate quantity that must be diffused through the atmosphere.

"A generation of a thousand million men," says our eloquent author, "is renewed every thirty years: thousands of millions of animals cease to live, and are reproduced in a much shorter period. Where is the nitrogen which they contained during life? There is no question which can be answered with more positive certainty. All animal bodies, during their decay, yield the nitrogen, which they contain, to the atmosphere, in the form of ammonia. Even in the bodies buried sixty feet under ground in the churchyard of the Eglise des Innocens, at Paris, all the nitrogen contained in the adipocire was in the state of ammonia. Ammonia is the simplest of all the compounds of nitrogen; and hydrogen is the element for which nitrogen possesses the most powerful affinity." 73.

As ammonia and its volatile compounds are extremely soluble in water, its vapour in the atmosphere is speedily dissolved in the moisture diffused through it, and returns again to the earth in every shower of rain. Rain and snow water almost always contain a certain amount of carbonate of ammonia, varying much indeed in different seasons and in different localities. The quantity is greater in Summer than in the Spring or Winter, because the intervals of time between the showers in the former season are greater; and when several wet days occur together, the rain of the first day must contain more of it than that of the second. The presence of ammonia in rain is readily shewn by merely adding a little sulphuric or muriatic acid to it, and evaporating it nearly to dryness: the ammoniacal salt is detected by the peculiar pungent odour, exhaled upon adding a little powdered lime to the residue. The *softness* of rain water is owing to the presence of carbonate of ammonia in it.

That ammonia exists pretty freely in many parts of certain plants is abundantly obvious. The juices of the maple and of the birch yield it readily; so do all vegetable extracts; as well as most flowers, leaves (especially those of the tobacco plant) and roots when distilled with water; also not a few fruits, as for example the unripe pulp of the almond and peach, &c.

It is from the Ammonia, obtained by the roots of plants in the manner we have now explained, that most of the Nitrogen that exists in so many of their products as their gluten, albumen, and alkaloid bases, is derived. Here we may observe that the nutritious quality of vegetable food is, in a great measure, proportionate to the quantity of azotised materials which it contains. A horse may indeed be kept alive by feeding it with potatoes, (which contain a very small quantity of nitrogen); but life thus supported is a gradual starvation; the animal increases neither in size nor strength, and sinks under every exertion. The quantity of rice that a Hindoo will consume often astonishes a European; but our astonishment ceases, when we know that this grain contains a very small proportion of azotised matter. The system is constantly requiring a certain supply, to compensate for the continual expenditure by the urinary secretion and in other ways; and the person is therefore obliged to make up by the quantity, for the unsatisfactory quality, of the food taken.

How far M. *Liebig* is correct in his theory that most of the nitrogen

of plants (and therefore of animals too) is primarily derived in the state of ammonia, we cannot take upon ourselves to determine. Mr. *Johnston*, we observe, inclines to the opinion that the chief supply is rather from the *nitrates*, that are almost always present in the soil. The generation of Nitrico Acid seems to be continually going on, wherever vegetable matter is in a process of decay. It is produced also largely in some climates during thunder storms—every flash of lightning causing the union of the two elements of the atmosphere, along the line of its track. Certain it is that the presence of nitrate of potash or of soda in most soils contributes greatly to their fruitfulness, and we know that vegetation is always very luxuriant where these salts abound.

Whichever view we take of this question (and there is probably truth in both), we cannot deprive ourselves of the pleasure of extracting the following passage, as it will give our readers a good idea of M. *Liebig's* felicity of illustration.

"Let us picture to ourselves," says he, "the condition of a well-cultured farm, so large as to be independent of assistance from other quarters. On this extent of land, there is a certain quantity of nitrogen contained both in the corn and fruit which it produces, and in the men and animals which feed upon them, and also in their excrements. We shall suppose this quantity to be known. The land is cultivated without the importation of any foreign substance containing nitrogen. Now, the products of this farm must be exchanged every year for money, and other necessaries of life, for bodies therefore which contain no nitrogen. A certain proportion of nitrogen is exported with corn and cattle; and this exportation takes place every year, without the smallest compensation; yet after a given number of years, the quantity of nitrogen will be found to have increased. Whence, we may ask, comes this increase of nitrogen? The nitrogen in the excrements cannot reproduce itself, and the earth cannot yield it. Plants, and consequently animals, must, therefore, derive their nitrogen from the atmosphere." 72.

We can now better understand the reason why animal manure (being so rich in nitrogen) is so necessary for the successful cultivation of all the esculent grains, as well as of grass and other fodder for the use of cattle. The proportion of glutinous matter—the nutritious constituent—in wheat, &c. is found to vary very much according to the kind and quantity of the manure, with which the ground has been supplied. For example, it has been found that 100 parts of wheat grain on a soil, manured with cow-dung (a manure which contains the smallest quantity of nitrogen), afforded only 11.95 parts of gluten, and 64.34 parts of amylin or starch; whilst the same quantity of the grain, grown on a soil manured with human urine,* yielded as much as 35 per cent of gluten.

Putrescent urine, it is well known, abounds in azotised ingredients in the form of ammoniacal salts—the urea being converted, under the influence of heat and moisture, almost exclusively into carbonate of ammonia.

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* We need scarcely remind the reader that the kidneys are the great emunctories for the discharge of nitrogen from the body, and that every lesion therefore of their function is necessarily accompanied with some disturbance in the eliminating processes, that are continually going on throughout all parts of the animal economy.

The solid excrements of animals give out much less ammonia, and consequently contain much less nitrogen, than their urine; and here it deserves to be noticed that the more perfectly that the food, more especially in the case of herbiverous animals, is digested and assimilated, the more completely is it deprived of its azotised ingredients, and therefore the less fertilising will be the ordure. There is so much curious and instructive information in the following extract that we must give it without abridgment.

"Liquid animal excrements, such as the urine with which the solid excrements are impregnated, contain the greatest part of their ammonia in the state of salts, in a form, therefore, in which it has completely lost its volatility when presented in this condition; not the smallest portion of the ammonia is lost to the plants; it is all dissolved by water, and imbibed by their roots. The evident influence of gypsum upon the growth of grasses—the striking fertility and luxuriance of a meadow upon which it is strewed—depends only upon its fixing in the soil the ammonia of the atmosphere, which would otherwise be volatilised with the water which evaporates. The carbonate of ammonia contained in rain-water is decomposed by gypsum, in precisely the same manner as in the manufacture of sal ammoniac. Soluble sulphate of ammonia and carbonate of lime are formed; and this salt of ammonia possessing no volatility is consequently retained in the soil. All the gypsum gradually disappears, but its action upon the carbonate of ammonia continues as long as a trace of it exists." 87.

Before quitting this part of our subject, we may allude for a moment to the spontaneous generation of *nitre* or saltpetre in the soil of certain countries, more especially of the East Indies—from which, it is well known, our chief supply of this substance is obtained. The formation of the nitric acid seems to be the result of a slow combination of the nitrogen in the ammonia, abounding in the soil, with the oxygen of the atmosphere—a combination which is much promoted by the presence of alkaline bases, at the same time, in the former.* We have already alluded to the production of nitric acid in the atmosphere during thunder-storms; and certainly the frequency of these in the East Indies may, in some measure, account for the abundant formation of saltpetre on the surface of the ground in that country. In many parts of the Continent, it is prepared artificially from a mixture of common mould with animal and vegetable remains containing nitrogen: nitric acid is gradually generated, and unites with the potash, lime and magnesia that are usually present. By dissolving these salts in water, and precipitating the two earths by carbonate of potash, a solution of nitre is obtained. But this is a subject which we need not pursue; suffice it merely to say, the addition of the nitrates to certain soils has been found to increase their productiveness in a very remarkable degree.

Having now considered the primary and fundamental elements of vege-

* "Ammonia by its transformation," says M. *Liebig*, "furnishes nitric acid to the tobacco plant, sunflower, *Chenopodium*, and *Borago officinalis*, when they grow in a soil completely free from nitre. Nitrates are necessary constituents of these plants, which thrive only when ammonia is present in large quantity, and when they are also subject to the influence of the direct rays of the sun—an influence necessary to effect the disengagement within their stem and leaves of the oxygen, which shall unite with the ammonia to form nitric acid." 82.

table substances, we are prepared to advance a step in our inquiry, and proceed to the examination of—

The Mineral Constituents of Plants.

From the preceding observations it will be remarked that all the elements, necessary for the support of animal and vegetable life, are contained in three substances, which are universally diffused throughout the atmosphere, viz. Carbonic acid, Water, and Ammonia. Now, it is a curious and most interesting fact that these are the very substances which are the ultimate products of the putrefaction and decay of organized matter. "All the innumerable products of vitality," to use the expressive language of our author, "resume after death the original form from which they sprung. And thus death—the complete dissolution of an existing generation—becomes the source of life for a new one."

Besides, however, the simple elements of oxygen, hydrogen, carbon, and, we may now add, nitrogen, there are certain solid mineral substances (usually of an alkaline, earthy, or metallic nature) which are present in almost all, if not in all, plants, and the presence of which is necessary to their proper growth, if not to their very existence. These saline matters vary a good deal, in kind as well as in quantity, in different tribes of plants. The ashes of all are found to contain an alkaline carbonate; and we may therefore assume that the presence of a certain amount of Potash or of Soda is absolutely requisite for the healthy condition of a vegetable.

The various kinds of grasses and reeds, and especially the tribe of the Equisetaceæ, contain in the outer parts of their leaves and stalks a large quantity of Silica in union with Potash.* If a due quantity of the latter substance be not constantly present in the soil, the crops of grass or of grain raised upon it will soon begin to fail, unless an artificial supply be furnished by strewing the surface with wood-ashes, or some other substances that can afford it.

The great fertility of the soil that is formed by the disintegration of Lava and other volcanic matters, seems to be owing to the quantity of potash which it contains. The following extract affords another striking illustration of the same fact.

"The first colonists of Virginia found a country, the soil of which was similar to that mentioned above; harvests of wheat and tobacco were obtained for a century from one and the same field without the aid of manure, but now whole districts are converted into unfruitful pasture land, which without manure produces neither wheat nor tobacco. From every acre of this land, there were removed in the space of one hundred years 1200lbs. of alkalies in leaves, grain, and straw; it became unfruitful therefore, because it was deprived of every particle of alkali, which had been reduced to a soluble state, and because that which was rendered soluble again in the space of one year, was not sufficient to satisfy the demands of the plants. Almost all the cultivated land in Europe is

* The quantity of silicate of potash, that is removed from a meadow, in the form of hay, is very considerable. A curious illustration of this occurred some time ago near Heidelburg. A stack of hay was struck by lightning, and reduced to a mere vitreous mass. The substance, when first found, was supposed to be a Meteoric stone.

in this condition; fallow is the term applied to land left at rest for further disintegration. It is the greatest possible mistake to suppose that the temporary diminution of fertility in a soil is owing to the loss of humus; it is the mere consequence of the exhaustion of the alkalies." 149.

All our Cereal or corn plants, as well as many others, require, for the due development of their seeds, a supply also of phosphate of Magnesia* and of Ammonia. Now these salts, although present in most cultivated lands, are only found abundant in those soils where men and animals are dwelling together, and where consequently there can be a supply of proper manure. It has often been a subject of puzzling speculation to account for the well-known fact that the Cereal grains are never fully and completely developed, except in the neighbourhood of the habitations of men. The explanation is very simple: this tribe of plants require a certain supply of particular saline matter (besides nitrogen), which is not readily obtained except in the manner now mentioned.† For the same reason, sea-plants will not thrive in an inland situation, unless indeed near salt-works, which may be several hundred miles distant from the sea; and the *Chenopodium* is always found near a dunghill, in order that it may find a supply of ammonia and of the nitrate salts. Oxalate of Lime is invariably present in lichens, and seems indeed to occupy the place of woody fibre, which is absent; while the oxydes of Iron and of Manganese, not to mention Sulphur in some of its forms of combination, and Phosphorus, are found in other tribes of the vegetable world.

We have now enumerated all, or nearly all, the inorganic mineral substances which are found in land plants; Iodine and Bromine exist, it is well known, in many marine vegetables. Let us now inquire what is the source of these substances, and in what manner plants obtain and incorporate them with their systems. Of course, the constant decay of vegetable matter itself, that is going on everywhere, restores to the soil no inconsiderable portion of the saline matter, which had been previously derived from it. But this will by no means account for the entire supply; and we must therefore look elsewhere for the store-house, from which it must all primarily come. In this, as in every other arrangement of the material world, there will be found to be a beautiful mechanism of alter-

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* "Phosphate of magnesia in combination with ammonia is an invariable constituent of the seeds of all kinds of grasses. It is contained in the outer horny husk, and is introduced into bread along with the flour, and also into beer. The bran of flour contains the greatest quantity of it. It is this salt which forms large crystalline concretions, often amounting to several pounds in weight, in the *cæcum* of horses belonging to millers."

We do not now, with such a fact as this before us, require to be told whence the animal system derives its supply of phosphatic salts for the formation of the bones, and other parts of the body in which they exist.

† "The small quantity of phosphates, which the seeds of the lentils, beans and peas contain, must be the cause of their small value as articles of nourishment, since they surpass all other vegetable food in the quantity of nitrogen which enters into their composition. But as the component parts of the bones (phosphate of lime and magnesia) are absent, they satisfy the appetite without increasing the strength."

nating and reciprocal compensation, which proclaims at once the power and the wisdom of the Great Architect of all things.

The parent source, from which by far the largest supply of the saline matter of the soil, and consequently of its productions, is derived, is unquestionably the evaporation that is continually going on from the surface of the ocean. The salts, which most abound in sea-water, are the chlorides of Sodium, Potassium, and Magnesium, and the sulphate of soda: there is also a small proportion of the sulphate, and a still smaller of the carbonate of Lime. It is from this last-named salt, although its quantity be so minute that its presence is scarcely appreciable in a pound of sea-water, that the marine Mollusca and coral animals derive all the materials for the formation of their coverings and habitations. Ammonia also is found in sea-water. *Marcet* has expressly told us that "when the solid saline residue obtained by evaporation is heated in a retort to redness, a sublimate of sal-ammoniac is obtained."

Thus, then, we find that the water of the ocean contains those very substances—viz. Carbonic Acid, Water, and Ammonia—which we have already shewn to be the sources from which plants derive their subsistence on the land. Such, then, being the case, we have no difficulty in understanding how the weeds, that grow attached to rocks at the bottom of the ocean, obtain those elements which are essential to the very constitution of vegetable matter; and we have presented to our view a new illustration of the all-perfect adaptation of Nature's works to the varying circumstances in which they happen to be placed.

Having now pointed out the various constituent elements that enter into the composition of vegetable substances, and explained the sources from which these are derived, we shall occupy the rest of this article with what may be called the practical application of the subject, in reference more particularly to the diet and food of animals.

An obvious inference from many of the foregoing details, may probably have suggested itself already to most of our readers, viz. that the products, generated by any plant, will vary considerably according to the circumstances in which it is placed, and the soil on which it grows; and for this very simple reason that the different products contain very different proportions of the elementary vegetable constituents.

We have seen, for example, that the glutinous and albuminous parts of plants contain a larger proportion of Nitrogen than any other; and we are therefore prepared to expect that, unless a due supply of azotised materials be supplied to the plant during its growth, the formation of these vegetable substances will be but imperfect, and will be, to a greater or less extent, replaced by that of other substances in which nitrogen is less predominant: such are sugar, starch, oil, wax or gum. Hence, as our author remarks, the mode of culture, employed for the purpose of procuring fine pliable straw for Florentine hats, is the very opposite to that which must be adopted in order to produce a maximum of corn from the same plant. One peculiar method must be used for the production of nitrogen in the seeds; another for giving softness and pliancy to the straw, and another still, when we wish to give such strength and solidity to the stem as will enable it to bear the weight of heavy ears. In illustration of the same subject, we may state that the quantity of fecula in potatoes increases,

when the soil contains much decaying vegetable fibre; but decreases when it is manured with strong animal manure,—the potatoes acquiring, in the first instance, a mealy, and in the second, a soapy consistence. It is obvious, therefore, that the agriculturist must proceed in the culture of plants on very analogous principles to those which have been so satisfactorily adopted of late years in improving the breeds of different animals, according to the object which the farmer may have in view—whether this be to increase or diminish the quantity of fat, to improve the character of the hide, to lessen the size of the bones, and so forth. But as this subject scarcely comes within the reach of our inquiries—except indeed as illustrating the influence of external objects on animal life—we must pass it over for another, which is not only of very curious, but really of practical, interest to the medical man, viz. the relative value of different vegetable substances as food for men and animals, judging of them by their chemical constitution. We have already more than once alluded to the circumstance, that the degree of nutritiousness of any vegetable substance is generally proportionate to the quantity of azotised matter which it contains. Now, as this is most abundant in the Cereal grains, we at once perceive why it is that these form the staple article of food of man in all countries. All the varieties of corn contain a considerable portion of Gluten and Albumen (the two most highly azotised vegetable products), and but a very small quantity of Gum, Sugar, or Starch—substances which contain little or no nitrogen. Keeping this fact in view, the following tables, given by Mr. *Johnston*, are interesting in a double point of view, and suggest some very useful hints with respect to diet and regimen.

"If we suppose," says he, "an acre of land to yield the following quantities of the usually cultivated crops, namely—

Of wheat,	25	bushels,	or	1500 lbs.
Of barley,	38	..	or	2000 ..
Of oats,	50	..	or	2250 ..
Of peas,	15	..	or	1000 ..
Of beans,	25	..	or	1600 ..
Of Indian corn,	60	..	or	3120 ..
Of potatoes,	10	tons,	or	22400 ..
Of turnips,	25	..	or	56000 ..

The weight of dry starch, gluten, sugar, and gum, reaped in each crop, will be represented very nearly by the following numbers:—

	Starch.	Gluten and Albumen.	Sugar and Gum.	Woody Fibre.
Wheat, . .	825 lbs.	315 lbs.	60	..
Barley, . .	1200	120	160	..
Oats, . .	1215	100	250	..
Peas, . .	420	260	20	..
Beans, . .	670	370	..	..
Indian corn, . .	2100	280	90	..
Potatoes, . .	2688	224	..	1253
Turnips, . .	3900	1400	5000	..

If these crops are fair average returns from the same kind of land—if the acre, for example, which produces 25 bushels of wheat, will also pro-

duce 10 tons of potatoes and so on—we see that the crop of barley or oats will yield half as much again of Starch, and more than double the quantity of Sugar and Gum that a crop of wheat does; and that the quantity of these substances from the crop of turnips is five times as much of the one, and more than six times as much of the other. Again, if we compare the quantity of the Gluten derivable from the different crops, we find that nearly four times as much may be had from the turnip crop as from the wheat, beans, and Indian corn crops; and that the crops of barley and oats yield by much the smallest quantity of it.

It thus appears that, whether the nutritious property of vegetable food depends upon its Starch or its Gluten, a turnip crop is by far the most useful one that can be raised. Could this vegetable be rendered, says Mr. *Johnston*, an agreeable article of general human consumption, the produce of the land might be made to sustain a much larger population than under any of the other kinds of cropping alluded to.

However this may be, the table we have given, sufficiently explains the reason of wheaten flour being so much more nutritious than barley or oaten flour—the greater abundance of Gluten in the one than in the other. One of the most striking physical peculiarities of this vegetable substance is the tendency which it shews, when moistened and exposed to the air, of undergoing changes similar to those of the putrefaction of animal bodies. This is owing to the circumstance of its containing Nitrogen as one of its component elements—in the proportion, in the case of wheat flour, of from 12 to 20 per cent.

The ultimate composition of vegetable gluten is remarkably analogous to that of the curd of milk, of the white of egg, and also of animal gelatine and of fibrine: hence it has often been called an Animo-Vegetable matter.

All these substances consist of nearly the same proportions of carbon, hydrogen, oxygen, and nitrogen, and they all contain, moreover, a small portion of phosphorus and sulphur. The cause therefore of the offensive odour, which they emit during decay, is sufficiently obvious.

In estimating, however, the nutritious properties of different kinds of food, we should not be guided by any single consideration in respect of its constitution—as for example by the mere amount of the Gluten of which it consists and of the Nitrogen which it contains—but rather pay due attention to all the various elements, of which it is made up. We should remember that the food has to serve not only to repair the great waste of the solid parts of the body, arising from the unceasing molecular absorption that is going on at every point, but also to supply the carbon that is continually exhaling from the lungs, during the process of respiration. Hence it is that the use of a diet consisting only of such articles as abound in one particular element, however nourishing this may be, cannot be long continued, without injury to health. The following observations of Mr. *Johnston* on this subject deserves to be generally known.

"The reader, therefore, will understand why a diet, which will keep up the human strength, is easiest compounded of a mixture of vegetable and animal food. It is not merely that such a mixture is more agreeable to the palate, or even that it is absolutely necessary,—for, as already observed, the strength may be fully maintained by vegetable food alone;—it is, because without animal food

in one form or another, so large a bulk of vegetable food must be consumed in order to supply the requisite quantity of nitrogen in the form of gluten. Of ordinary wheaten bread alone, about 3 lbs. daily must be eaten to supply the nitrogen,* and there would then be a considerable waste of carbon in the form of starch, by which the stomach would be overloaded, and which, not being worked up by respiration, would pass off in excretions. The wants of the body would be equally supplied, and with more ease, by $1\frac{3}{4}$ lb. of bread, and 4 ounces of cheese.

"Of rice, again, no less than 4 lbs. daily would be required to impart to the system the required proportion of gluten; and it is a familiar observation of those who have been in India and other countries where rice is the usual food of the people, that the degree to which the natives distend, and apparently overload their stomachs with this grain, is quite extraordinary.

"The stomachs and other digestive apparatus of our domestic animals are of larger dimensions, and they are able, therefore, to contain with ease as much vegetable food, of almost any wholesome variety, as will supply them with the quantity of nitrogen they may require. Yet every feeder of stock knows that the addition of a small portion of oil-cake, a substance rich in nitrogen, will not only fatten an animal more speedily, but will also save a large *bulk* of other kinds of food." 237.

But, besides a due supply of the elements now mentioned, the food of all animals must contain a certain quantity of those Inorganic or Mineral materials which are found to exist in every part and tissue of the body, and which moreover are constantly passing out of the system in the various excretions. The blood and all the fluids contain a considerable proportion of saline matter of different kinds, sulphates, muriates, phosphates, and other compounds of Potash, Soda, Lime, and Magnesia; and every one knows that the solid strength of the bones is owing to the large quantity of earthy materials, which enter into their composition. Now the daily and hourly waste of all these substances must be replaced in some manner or another; else the health of the animal will be speedily observed to suffer. It is in the food consumed that we must look for this supply; and, if we examine the food of animals living in a state of nature, we shall always find that a very considerable quantity of saline matter enters into its constitution. In a former part of this article we have shewn that all plants contain more or less of alkaline and earthy salts—the proportion of these varying a good deal not only in different plants, but also according to the nature of the soil on which they grow. It is indeed a beautiful arrangement of Providence, as remarked by our author, that plants refuse to grow in a soil, from which they cannot readily obtain a due supply of soluble inorganic matter—since this very matter, which ministers first to their own wants, is afterwards surrendered by them to the animals they are destined to nourish.

By looking at the following table—which gives the proportionate quantities of the different inorganic substances in 100 lbs. of the ashes of four of the staple articles of vegetable food—we shall be able at once to perceive the relative fitness of each article to yield the necessary supply during

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* "The flour being supposed to contain 15 per cent. of dry gluten, on which supposition all the above calculations are made."

the growth of the young animal, and to compensate for the excrementitious elimination that is going on from the body of the adult one.

	Wheat.	Barley.	Oats.	Beans.
Potash	19	12	6	19½
Soda	20½	12	5	38
Lime	8	4½	3	7¾
Magnesia	8	8	2½	7½
Alumina	2	1	½	1½
Oxide of Iron	0	trace.	1½	0
Silica	34	50	76½	6
Sulphuric acid	4	2½	1½	4
Phosphoric acid	3½	9	3	13¾
Chlorine	1	1	½	2
	100	100	100	100

It is chiefly from the various forms of the seeds of plants that herbiverous animals derive the Phosphate of Lime* which exists in most parts, (exclusively of its being the principal earthy constituent of the bones) and especially in the milk—to suit this for the food of the young creature during the early period of its life. The sugar of the milk supplies the comparatively small quantity of carbon necessary for its respiration, and the curd or *casein* yields not only the materials of the growing muscles and of the animal part of the bones, but also the phosphate of Lime required for the complete solidification of these pillars of the body. After giving an analysis of milk, Mr. *Johnston* shews how amply sufficient is the supply which it yields for the wants of the young offspring. He then presents us with a very interesting and instructive calculation :

"The quantity of solid matter thus yielded by the cow in her milk is really very large, if we look at the produce of an entire year. If the average yield of milk be 3000 quarts, or 750 gallons in a year—every 10 gallons of which contain bone-earth enough to form about 7 ounces of dry bone—then the milking of the cow alone exhausts her of the earhty ingredients of 33 lbs. of dry bone. And this she draws necessarily from the soil!

"If this milk be consumed on the spot, then all returns again to the soil in the annual manuring of the land. Let it be carried for sale to a distance, or let it be converted into cheese and butter, and in this form exported, there will then be a yearly drain upon the land of the materials of bones, from this cause alone, equal to 30 lbs. of bone-dust. After the lapse of centuries, it is conceivable that old pasture lands, in cheese and dairy countries, should become poor in the

* It has been found that dogs, when fed upon fine white bread, did not live beyond 50 days or so: while others fed on household bread, in which there is a portion of the bran—that contains a larger proportion of earthy matter than the substance of the grain itself—continued to thrive for a much longer period of time. Such a fact as this alone is sufficient to prove the needlessness and cruelty of trying to discover the relative nutritiousness of different articles of food, by feeding animals with them exclusively.

materials of bones—and that in such districts, as now in Cheshire, the application of bone-dust should entirely alter the character of the grasses, and renovate the old pastures.

"Thus, as was stated at the commencement of the present section, the study of the nature and functions of the food of animals throws additional light upon the nature also and final uses of the food of plants. It even teaches us what to look for in the soil—what a fertile soil *must* contain that it may grow nourishing food—what we must add to the soil when chemical analysis fails to detect its actual presence, or when the food it produces is unable to supply all that the animal requires." 243.

We have said enough, we trust, to have excited a desire, in most of our readers, to know more of the very interesting subject of Dietetic and Agricultural Chemistry. Let them diligently peruse, nay study, the admirable work of *Liebig*— a man who, it seems to us, has produced as great a revolution in his science as *Black* and *Lavoisier* did at the close of last century. Those, who wish to have a lucid summary of the subject, will do well to purchase the little volume of Mr. *Johnston*; it is full of interesting matter, and withal very reasonable in price.

Clinique Chirurgicale de l'Hopital de la Pitie. Par *J. Lisfranc*. T. 3. 1843.

This, the concluding volume of M. Lisfranc's Clinical Surgery, falls far short of its predecessors in the amount of valuable practical information and original remark which it contains, while it surpasses them in the endless repetitions, the pompous diction, and the self-sufficiency by which it is disfigured. Treating almost exclusively of the affections of the female organs of generation, it enters into details too familiar to the English reader to justify our giving a full analysis of its contents; we will merely extract some portions from the various chapters which seem most deserving of attention.

Polypi of the Uterus.—M. Lisfranc prefers removing these by excision to the ligature. The operation is attended with little pain, and is seldom followed by any accident. Hæmorrhage is very rare, for in 165 cases he has only met with it twice, while often but a few drops of blood flow. Many inconveniences attend the ligature. Its application is often very difficult and imperfect. Portions of the substance of the uterus are sometimes embraced within its noose, especially when it is applied to polypi having little or no pedicle. It may be displaced, and is often long in becoming detached. Abundant and fetid dicharges are caused by its use. So trifling are the sufferings frequently after excision that the practitioner himself is thrown sometimes off his guard, and thus serious or fatal metroperitonitis may be the consequence of insufficient caution in diet, bodily exercise, &c. Time and hygienic precautions are also required for the

subsidence of the hypertrophy of the uterine structure which so commonly accompanies polypus.

Most women, prior to the removal of the polypi, have suffered for a greater or less period from discharges of blood, and will be found liable to congestions of important viscera, unless precautionary bleedings be practised for some time subsequent to the operation. Some patients, indeed, suffer a visible deterioration of health, without any visceral congestion, or anormal condition of the uterine functions, to account for it. An issue on the arm is here indispensable, and of admirable efficacy. It should not be placed on the leg, as risking the production of pelvic excitement.

Polypi of the Vulva.—A prolongation or tumefaction of the mucous membrane of the *urethra* is sometimes mistaken for this, forming, as it then does, a large tumour of a reddish or deep red colour. By pressure, however, it is usually found returnable into the canal, and on the passage of a catheter it then offers scarcely any obstruction. Its diagnosis is more difficult when it has become hardened and thickened, and is of less consequence, for if irreducible its removal will become as necessary as that of a polypus. If not indurated it will sometimes yield to antiphlogistics and the use of the douche. When returned, the internal surface of the urethra should be scarified, an operation which is beneficial not only by the disgorgement of the vessels it produces, but by the contractions ensuing upon the cicatrices that are formed. In the absence of inflammation, the best means of all is to touch the part lightly, every few days, with the nitrate of silver.

Polypi of the vulva are usually reddish in colour and soft in consistence. In their removal the knife is to be preferred to the ligature, as their roots usually extend far farther than their apparent insertion; and when they are merely cut off at this point they are very liable to return, a circumstance the author has never known to occur when a careful dissection of their roots has been accomplished.

Polypi of the Vagina.—These are far less common than polypi of the uterus. It is very important to bear in mind, that when the polypus has acquired a certain volume, it exerts traction upon the part whereto it is attached, and, in this way, often draws down the rectum or vesico-rectal septum to such an extent, that without great care, these parts may become perforated during the operation. And this accident is the more likely to happen, because, in pursuing the dissection of the roots of the polypus, these will often be found extending into the very substance of the vagina and rectum. Where the complete removal of the disease is impracticable, a slight application of the proto-nitrate of mercury should be made to the portion which remains.

Moles.—"A mole is a fleshy body, organized but deprived of sensibility; it is generally softish, but at other times more or less hard; its form is various and indeterminate; it originates and is developed within the uterus, and after a while is expelled from its cavity." The author details the very various opinions of the old medical writers upon the origin and nature of these substances; and believes himself that, in most cases, they are blighted

ova; but as they have been also repeatedly met with in old women, in women whose chastity was beyond suspicion, and in others, in whom the hymen continued perfect, he adds, that they undoubtedly may occur independently of conception, and, in such cases, supposes them to arise from the organization of a clot of blood thrown out into the cavity of the uterus. The embryo is frequently dissolved and removed, and the mole is then a placentar-looking substance, having a cavity containing more or less fluid in its substance, and lined with a serous membrane. When the fluid has been discharged prior to its expulsion, the mole becomes solidified and indurated, while traces of cavity can only be discovered by careful examination; and the existence of which at all may sometimes be doubted. When the fœtus has died at a more advanced period of gestation, portions of its osseous structure may be found in the substance of the mole. Moles possess a mere vegetative life, and no true circulation. Sinuses on their surfaces communicate with those of the uterus, and frequently long prior to their expulsion they give rise to exhausting hæmorrhages. More than one is sometimes found. A mole may exist prior to conception, and is sometimes found with a full grown fœtus. Coagula of blood may exactly resemble moles until cut into. The mole is usually expelled in 60 or 80 days, and great suffering and hæmorrhage may be then present. The lochia and condition of the breasts are much the same as after natural labour. The period of expulsion, age and very existence of a mole is usually a mere matter of conjecture, as the diagnostic marks are utterly insufficient. When it complicates pregnancy, the fœtus, deprived of due nutriment, usually perishes, and premature labour results. The ancients, when they supposed these bodies to be present, adopted the most injurious practices, such as violent medicines and exercises, in order to dislodge them. The moderns leave the case to nature, only interfering when hæmorrhage, imperfect expulsion, &c. demand their doing so.

Physometra, or Uterine Tympanitis.—The air producing this affection generally proceeds from some body putrefying within the uterus, the occlusion of its os by spasm, coagula, mucosities, or other mechanical cause preventing the escape of the gas, which frequently consists of sulphuretted hydrogen. Nervous women who have borne children are most liable to this complaint. The distended uterus may rise even above the umbilicus, and the pressure it produces gives rise to much pain and suffering, and sometimes to great constitutional irritation. Temporary relief may be obtained by the partial discharge of the air; but, mostly, the discharge occurs suddenly and with violence, and the patient is at once cured. The diagnosis from pregnancy, owing to the lightness and elasticity of the tumour, is usually not difficult. As inertia of the womb is generally the cause of the affection, tonics and general or local excitants are useful, but injections into the cavity of the womb itself are dangerous. The escape of the air may be facilitated by the introduction of a tube into the os uteri. In strong women, when sub-inflammatory action may be supposed to be present, small bleedings, warm baths, cataplasms, lavements, &c. must be employed; and, in most, a small derivative bleeding, providing great debility be not present, is serviceable. The entrance of atmospheric air from

without, and its dilatation of the uterine cavity, believed by some, is very doubtful.

Œdopsophia, or Noisy Expulsion of Gas from the Vagina.—This affection occurs in women (especially lame women) whose inferior vulvar aperture is narrow Oftentimes no symptom precedes it, and the patient is not aware of the existence of the complaint until the noisy expulsion occurs. The distended state of the parts may be felt by examination by the rectum, and the gas in part expelled by pressing on the hypogastrium. When the affection arises from a foreign body in a state of putrefaction, it will cease on the removal of this; but, in instances where none such existed, Lisfranc has frequently rendered the patient's condition much more supportable, by instructing her, prior to going into society, or, under any circumstance where the unexpected expulsion would prove annoying, to secure herself from this, by introducing a finger into the inferior aperture of the vulva, and thus give vent to it. In examining females for other complaints, he has frequently detected this affection, although concealed by the patients, and has always succeeded in affording great comfort by the above suggestion. If the vagina is capable of secreting this gaseous substance, it is from its being in a condition of inflammation or irritation, and therefore means of a mild antiphlogistic character, modified by circumstances, must be had recourse to, *e. g.* venæsection, warm baths, lavements, &c.

Hydrometra, or Dropsy of the Womb.—This is a rare affection, generally occurring during gestation. Sometimes the fluid escapes in small quantities by degrees, and, more rarely, the whole disappears at once to be shortly reproduced. The affection does not seem one that is immediately dangerous in itself, especially if the fluid escape from time to time; but the debility, and bad constitution of the subjects of it, and the organic changes in the womb or other viscera, which produce the affection, may give rise to serious cause of alarm. Occasionally, the fluid is removed at the third or fourth month of pregnancy, and is not reproduced; or it may finally disappear during delivery. In treating this disease we must look upon it as a mere symptom of some uterine affection. But there are cases where the presence of the fluid neutralizes the means adopted, and, if the symptoms are urgent, it must be evacuated. The use of violent aperients, the injection of substances into the womb, the employment of local or hip baths, and all similar means, tending to produce congestion of the uterus, must be interdicted. Secale cornutum, which has been recommended, has in some cases led to fatal inflammation. When the patient is not too feeble, and congestion exists, revulsive bleeding, general warm baths of bran-water, emollient injections, moderated exercise, and careful diet, are appropriate means. While inflammation is present, we should not empty the cavity, unless some urgent symptom exist, when the finger or a catheter may be introduced into the os uteri.

Inversion of the Uterus.—This may be complete or incomplete; and in these cases in which complete inversion has been thought to occur sometime after delivery, it probably had existed in an incomplete manner from

the beginning. As dilatation and softening of the uterine walls are only required for its production, it is found, not only after delivery, but also in women who have never borne children—*e. g.*—after the sudden removal of a polypus from the fundus uteri; and the affection may be produced, not only by traction, but by the compression of the upper portion of the enfeebled walls of the uterus, by the weight of the intestines, and the contraction of the abdominal muscles.

It is surprising how little suffering an affection, usually so formidable, produces in some cases. The author relates a case of an old woman who died of bronchitis in the Salpêtrière, and upon the examination of whose body most complete inversion of the uterus was found. Convalescent from a former attack, she had been under observation a considerable time prior to the fatal seizure of bronchitis, and was observed to be very active in her habits, regular in most of her functions, and manifesting no one symptom whatever of uterine derangement, and the inversion was discovered after death, as it were, by accident. As a general rule, however, those women who do not perish forthwith drag out a miserable existence. M. Lisfranc does not believe in the authenticity of those cases, in which the uterus is said to have been reduced spontaneously or by art, at the expiration of days, weeks, or even months after the inversion has occurred.

Prolapsus of the Uterus.—Upon the effect of *engorgement* or hypertrophy of the uterus in inducing this, the author thus remarks.

"Displacements of the uterus are astonishingly frequent. I have demonstrated this fact too frequently to my clinical class at La Pitié for it to be doubted. But it is generally believed that these affections are almost always essential (primary). I am not of this opinion, and it has caused grave errors in therapeutics to be committed; for, on admitting it, the descent, or deviation of the womb is alone treated, and the uterine engorgements are neglected until they become incurable. I have advanced elsewhere that I will prove, whenever it may be required, that the descent, prolapse, anteversion, retroversion, and lateral inclination of the uterus, are excessively rare, when this organ is exempt from hypertrophy. For more than fifteen years I have especially directed my attention to this important point of pathology. I have examined thousands of women, and, to the present time, I have found some few cases only in which these morbid affections existed without a sensible increase in the size of the uterus. * * * * When the uterus is engorged in its entire circumference it descends parallel to the pelvic axis: if its increase of volume prevails in front there is anteversion, and the contrary when such augmentation occurs at the posterior portion of the organ. Lastly, when the induration exists upon one side, to that side it inclines. It requires but the simplest knowledge of physics to perceive that a pyriform body, somewhat flattened, suspended in the pelvis by four supports, must, if its anterior portion acquires a considerable thickness, execute a movement which will carry its superior portion towards the symphysis pubis, and *vice versâ*.

"But I have often heard the following question asked by men who object to these new ideas. 'Is this hypertrophy, which is observed in displacements of the uterus, primary or consecutive?' If it followed the displacements it is evident we should very frequently meet with these affections alone, for, before the development of the engorgement, the patients would suffer pain, and in examining them we should find such engorgement absent; but essential displacements being in fact exceedingly rare, every one must admit their production by the hypertrophy.

If required, there is still another proof in favour of this opinion. The engorged womb is displaced—I confine my treatment simply to the engorgement. I cure it, and the organ shortly after resumes its natural position in the pelvis.

"These statements are neither idle nor merely curious. Every one, reflecting upon the subject, must see that it is not a matter of indifference whether we exclusively treat any displacement of the uterus, or whether we attack an engorgement of that organ." 409-11.

The engorgement, in fact, must be the primary object of treatment, and, if degeneration of structure has not occurred, may often be effectually relieved. The pessary must be delayed until this is subdued, and may not even then be required.

In reference to the irritation of the bladder, so frequently prevailing when the uterus is displaced, M. Lisfranc observes—

"This inconvenience is especially found in pregnant women. An advantageous means of facilitating the expulsion of the urine is to pass the finger into the vagina behind the pubes, and thus relieve, for the time, the neck of the bladder and urethra from the pressure which the uterus exerts upon them. The patients easily perform this manœuvre for themselves.

"Women are also often tormented by excessively frequent desire to urine, so that, especially about the menstrual periods, they have to rise sometimes 15 or 20 times in a night. Topical emollients and narcotics occasionally produce excellent effects. I have great confidence in the following remedy, founded upon the great success that has attended my use of it, conjoined with derivative bleeding from the arm. A small lavement, nearly cold, is administered night and morning, containing a few grains of camphor, suspended in yolk of egg, and a few drops of Sydenham's laudanum." 429.

Retroversion of the Uterus.—This is more common than the prolapse, but not so much so as the anteversion of the organ. Its usual source is engorgement, and it may occur suddenly or come on slowly. Pelvic tumors often cause or increase the displacement; they can be traced in contact with the uterus, and yet are distinct from it, as the non-effacement of its cervix proves among other marks. The replacement of the uterus is painful and difficult, and yet not permanent. When it occurs during pregnancy, the development of the womb is often interfered with, and abortion may be produced. It may exert most injurious pressure upon other organs, and especially upon the bladder, giving rise to retention of urine, difficult frequently of relief, and yet, if not relieved, leading to gangrene or rupture of the bladder. Violent tenesmus is also present, and the woman is tormented with most urgent expulsive efforts, sometimes forcing the womb far beyond the external parts. Before any attempts at reduction are made, all inflammatory action must be relieved, when, indeed, the organ will frequently return to its normal position. Where this is not the case, the author furnishes us with the mode of procedure for effecting the reduction.

Anteversion of the Uterus.—In this (the converse of the preceding) we have the fundus of the Uterus directed towards the pubis, pushing the bladder downwards and forwards, and its cervix lodged in some portion of the concavity of the sacrum. It is usually said to be less frequent of occurrence than retroversion, but this is only the case when the uterus

contains the fruit of conception. In the empty state of the organ the deviation now under consideration is infinitely more common. The anterior face of the womb is more exposed to external injury, and consequent congestion. The habit women have of frequently emptying the bladder, also, allows the uterus, already disposed to do so by its weight, to descend in front. The habitual constipation of the Parisian women is another cause—the fæces being detained, as may be felt on examination, for some time opposite the junction of the neck and body of the uterus.

True anteversion is very rare in pregnancy. The symptoms and examination, when carelessly made, have sometimes led to the belief of the existence of an affection of the bladder rather than one of the uterus. This displacement usually comes on slowly, is less complete and less serious than retroversion, for its reduction is much easier.

Inclination or Obliquity of the Uterus.—This may arise congenitally from faulty conformation of the pelvic cavity, from constipation retaining the fæces above the cervix uteri, pelvic tumours, unequal length of the pelvic ligaments, &c.; but, when it occurs independently of pregnancy, it is usually caused by lateral engorgement of the uterus, or the presence of fibrous tumours. The author recommends early manual interference for the purpose of directing the os uteri towards the centre of the pelvis, and the due attention to the position of the woman during pregnancy.

Means of counteracting Displacements and Engorgements of the Uterus.

Sponges.—These must not be employed until all inflammation and pain are subdued, and, even when these are absent, they sometimes cause great suffering, compelling their removal, although the woman may have kept very quiet, and taken narcotics. But they frequently occasion great inconvenience at first, and yet must not too hastily be withdrawn; for the patient, becoming shortly accustomed to them, ceases to suffer. Indeed, neuralgic pains are often dissipated by the sponge, and it may sometimes be employed with advantage when we are in doubt as to the exact nature of the pain which exists. It must be frequently removed and cleansed, or it will give rise to inflammation and ulceration of the parts with which it is in contact. Sponges are useful in a relaxed state of the uterus, or of the utero-vulvar membrane, and in the early stages of the uterine displacements, but are quite inoperative against complete prolapse.

Pessaries.—Many women have the greatest repugnance to the employment of these, so as to render delay in their use imperative. Although some painful and irritable conditions of the vagina may be relieved by pessaries, as a general rule they become aggravated by them. In cases where no suffering pre-existed, very much is sometimes induced by these instruments. The existence of an abundant leucorrhœa, when not of an inflammatory origin, does not contra-indicate their use.

After the first application of the pessary the female should observe the recumbent posture for five or six days or longer, lying on a sofa, or long chair, preferably to a bed, the heat of which produces congestion of the

genital organs. Exercise must be only very gradually resumed. When the instrument excites great irritation, some blood should be abstracted, emollient injections and anodyne lavements administered, light diet adhered to, and a luke-warm anodyne cataplasm laid upon the belly. If the irritation does not subside, the instrument must be removed.

The pessary should be removed every 15 or 20 days, cleansed, and re-applied immediately; and when much suffering results from its use, we should carefully examine, to ascertain whether this arises from its having shifted its proper position, so as to require re-adjustment. The author enters into long detail of the different varieties of pessary.

Pessaries, which have been allowed to remain in the vagina for months or years, sometimes become so impacted, as to require dangerous operations for their removal. At other times, they penetrate the walls of the vagina or rectum, and excite acute inflammation or typhoid fever. When they excite inflammation in the textures they are in contact with, their removal is called for; but the question arises, whether this should be effected at once. This was M. Lisfranc's practice at the commencement of his career; but, having found the process of removal much aggravate all the sufferings of the patient, he subsequently put into force the antiphlogistic treatment prior to attempting it. When the pessary projects much towards the rectum, as it so frequently does, it is best removed by manœuvres made within the gut. When pessaries cannot be borne, small bags may sometimes be introduced into the vagina and subsequently inflated. Frequently the patient is cured, and the negligence of her attendant prevents his ascertaining that the pessary is no longer required, and thus it is often needlessly and injuriously retained.

Redness, Pimples, Aphthæ, and Granulations, situated on the Cervix Uteri.—The posterior lip of the os uteri is especially liable to these. Patches of redness, separate or confluent, are often found, especially when uterine leucorrhœa is present. Such redness is frequently found at the periods of puberty, and of the cessation of the menses; and is distinct from the normal redness observed in pregnancies and during the catamenia. Frequently no distinct symptoms are present, and it is not until the speculum is employed that a condition of parts, capable of leading to much mischief, if not relieved, is discovered. Neglected, incurable ulcers may follow. Antiphlogistic treatment is first required, and that proportioned to the acute or chronic character of the accompanying inflammation. Afterwards the fluid protonitrate of mercury should be applied, in the slightest possible manner, by means of a camel's hair pencil, to a small part only of the diseased surface. The speculum should then be filled with nearly cold water to counteract the effect of any superfluous application that may have accidentally resulted.

Non-Cancerous Ulcers of the Uterus.—These are very common in Paris, where leucorrhœa is endemic; they present every variety as regards form, size, and number, while their chief locality is the posterior lip of the os uteri. Hypertrophy accompanies and precedes the affection.

Sometimes the ulcers give rise to hæmorrhages, which must be met with depletory or derivative bleeding, and the application of the protonitrate of

mercury, as varicose tumour will become developed if the case is neglected. The ulcers are frequently of very slow and insidious progress. They are frequently mistaken for cancer, offering then scarcely any diagnostic mark beyond that derived from the success of treatment. This consists of antiphlogistic and soothing means until active inflammation has become dissipated. Injections of various kinds may then be used, and the iodide of potassium administered. In this way ulcers of bad aspect may often be cured, as in other parts of the body, without having recourse to caustics. But as a general rule these are necessary for the treatment of ulcers of these parts, but they should usually be deferred until all active irritation has become subdued. Still, if the ulcer makes great progress, in spite of antiphlogistics, which is not usual, or even remains stationary for two or three weeks, the use of the caustic must not be delayed. The fluid protonitrate of mercury is to be applied, rather with the intention of modifying the vitality of the part than of producing its disorganisation, except in the cases of very deep ulceration, extensive fungosities, or suspected cancer, when its application must be more extensive. The cauterization requires frequent repetition. When the ulceration is very slight, or mere excoriation, the nitrate of silver will suffice, but this sometimes causes hæmorrhage from the sore. From three to six months are generally required for the treatment of these cases, at other times much less time; while again some require even years. Out of 50 cases, the author states he has cured 42, by cauterizing in this way; but some are so obstinate as to wear out the patient by the discharge and excessive pain they cause, and render their removal by the knife imperative.

Cancer of the Uterus.—Cancer of the uterus without ulceration is rare, for in most cases it commences by ulcers, which at first appear quite simple. Still, occult cancer is occasionally met with, may be indolent, and frequently presents no symptoms distinctive from other engorgements. It must be treated as they are, and when suspected to be cancer, care must be taken not to practise any opening into its substance.

M. Lisfranc delivers his opinion, as to the *age* at which cancer usually occurs, in the following terms, in which he will be found to differ from other observers.

"Cancer is not found equally prevalent at all ages. It has been said that this disease usually manifests itself between the 40th and 45th years, and that then it became less frequent in the following progression; from 30 to 40; from 45 to 50; from 20 to 30; from 15 to 20; from 50 to 60; and, lastly, from 60 to 70. The numerous women I have attended since 1815, have convinced me that cancer of the uterus attacks most especially between the ages of 18 and 35, confirming the great principle of pathology, that an organ is more liable to become diseased in proportion to the activity with which its functions are carried on. It is erroneous to believe that this disease is more common at the period of the cessation of the menses. I have seen a cancer occupying the cervix uteri of a young girl in her 15th year. From 70 to 80 years of age uterine cancer is very rare." 610.

On the importance of early examination, the author thus expresses himself.

"It is, unfortunately, not rare to meet with a great number of women, in whom cancer has become incurable, without even its existence having been suspected. Is it a fact, that it is sometimes entirely latent? The mere idea of the affirmative of this, would carry consternation into every family. But fortunately it is not the case. I am convinced, that among the thousands (the author constantly uses this numeral when alluding to his cases) of cases which I have observed I have never yet seen one in which a morbid affection of the uterus, of whatever description it may be, did not manifest itself by easily appreciated symptoms. Thus, leucorrhœa, more or less permanent, anomalies in the menstrual function, lumbar, and other pains, &c. suffice to excite the attention of the well-informed practitioner. He does not forget that the slightest inconveniences originating in, or appearing to do so, affections of the genital organs imperiously require that manual examination, and that by the speculum, should at once be put into force. Since these wise precepts, so much insisted upon by Leuret, have been revived, since women, of all classes of society, have received salutary warnings from others, who themselves have benefited by a timely foresight, we have seen many fewer cases of incurable diseases of the uterus. Some time since, eight or ten women would come every week to La Pitié, in whom cancer of the uterus had proceeded beyond the resources of art, scarcely any of these unfortunate beings having been submitted to examination. At present we scarcely meet with two or three in a month. Let us hope that their number will continue to decrease; and we shall feel too happy if we have been able to contribute to its doing so." 613.

The author frequently alludes to the peculiar *odour* of cancer, and, in some doubtful cases, considers it may aid the diagnosis.

"The retention of coagula and secretions in the vagina, may produce most disagreeable, and disgusting odours; but they do not resemble that of cancer, which is *sui generis*, and which cannot deceive the clinical observer. It is yet more impossible to confound it with gangrenous miasmata. It is tainted (infecte) and nauseating, and distresses the patients themselves; while it oftentimes penetrates so far into the apartment, as to render it nearly uninhabitable, in spite of efficient ventilation." 621.

The internal use of iodide of potassium, and the external application of the protonitrate of mercury, are often of great service in cases apparently desperate; and in most they procure at least alleviation and retardation.

Amputation of the Cervix Uteri.—This may be performed—1. When the cancer is well characterised, and extends too deeply to admit of the use of caustic. 2. When it does not extend above the superior portion of the uterine insertion of the vagina. 3. As some ulcers of the leg require amputation, so may ulceration of the cervix, though not carcinomatous, justify the operation when, from its utter obstinacy, it proves too much for the debilitated condition of the patient. 4. The fact of the uterus being in a state of hypertrophy or engorgement must not necessarily prevent the operation. 5. The performance of the operation is encouraged by the fact, stated by Bayle, and confirmed by the author, that cancer of the uterus is attended with far less implication of surrounding parts, or affection of the absorbent glands, than when it attacks other organs. 6. As in cancer in general, it is but a limited portion of the tumefaction which is specifically diseased. 7. Even very great increase

in the size of the ovaries must not necessarily prevent the operation. 8. Where the whole of the diseased portion cannot be removed, that which remains may be cauterized. But the author states that very indifferent success usually attends this, which he calls the mixed operation. 9. It is an error to suppose that much pain or hæmorrhage attends the operation. Many patients at its completion are not aware that it has been commenced, while the bleeding is often very inconsiderable and easy of arrest.

The operation does not prevent future pregnancy, and not only does the fœtus usually reach its full time, but the labour is terminated with greater facility: of twelve persons who became pregnant, one only miscarried, and this was attributable to her own imprudence. In one case, twins, full grown, were easily delivered.

In one, only, among his numerous cases, has the author known the cicatrix produce obliteration of the os uteri.

Throughout his work, our author manifests a morbid sensibility as to the opinions of others concerning his statements, and a disposition to charge upon them the purloining of his discoveries and improvements in medical science. Upon the subject of amputation of the cervix uteri, he is especially sore. Our readers are aware, that the authenticity of his cases has been very generally disputed, both in France and in this country: and that he has been charged, not only with performing the operation where no cancer whatever existed, and reporting it as cancer cured, but also with very much understating the amount of the mortality which has attended his proceedings. His defence in the present work is lame beyond conception. Instead of meeting his antagonists upon the questions of fact which they have adduced, he charges them with having obtained his documents, (which, strange to say, he had himself prohibited the publication of,) surreptitiously from the Academy, and travestied their contents. He states, that, in his paper upon the subject, he merely declared that after 99 operations, 84 patients were cured, and 15 only died; but that he declines all verifications of such astounding results: "Professional honour imperiously forbids my doing so. I would not at any price betray the secrets of families. I will never forget the oath of Hippocrates." In answer to such evasive nonsense as this, we can only say, that M. Lisfranc has much over-rated the authority he supposes himself to possess in the medical world, if he thinks he can introduce an operation of this character into general use, without demonstrating, not only the ease with which it may be performed, but also the success that attends it; and that, not by mere assertions, but by authenticated facts. It is instructive to learn that he seldom now performs it himself. It is true that he explains this by the fact, that cancerous diseases are now so well ascertained, and treated in their earlier stages, (by the means he has introduced) that cases calling for operation comparatively seldom present themselves. The melancholy truth, however, forces itself upon our conviction that he has been deluded by the very ignorance of diagnosis he so bitterly blames in others, or by mere temporary success, into the performance of many most unnecessary and unjustifiable operations, until his rashness has been restrained, and he himself forced upon a more legitimate mode of proceeding, by the indignant voice of that profession, which

would have been but too well pleased to have followed his practice, and participated in his success, had the one been rational, and the other assured. Who is there believes, that the number of cases of *genuine cancer of the uterus* has been diminished materially by improvements in the mode of treatment of the disease?

Affections of the Fallopian Tubes and Ovaries.—One or both of the Fallopian tubes may become obliterated, sometimes through the whole extent of the canal, but usually only in limited portions of it. The affection may be congenital, or produced by compression, coagula, retained secretions, &c. It may result also from inflammation extending itself from the uterus or peritoneum. Sterility has often been observed in women who prior to marriage had been affected with metro-peritonitis, or who have subsequently suffered from it after accouchements; and by employing means adapted to chronic or acute inflammatory action, the author has frequently been enabled to relieve this condition. Inflammation of the ovaries sometimes follows a laborious accouchement, metro-peritonitis, &c.; and, when not proceeding from some such cause, it is a rare and usually subacute affection, very insidious in its progress, and sometimes brought on by cold, emmenagogues, the abuse of sexual intercourse, &c. Antiphlogistics and the iodide of potassium are the chief remedies.

Magnetism.—Mr. Ward of Ollerton and his lawyer-operator must not imagine themselves the introducers of magnetism as an agent in surgery. Our author has the following passage.

"Many affections of the womb produce violent sufferings, which even the muriate of morphia introduced by means of a blister fails to relieve. These pains, which manifest more or less of a neuralgic character, are remittent or intermittent, their exacerbations produce in the patient a state amounting to desperation, leading her sometimes into the greatest danger. The physician, finding he has exhausted the resources of his art, remains a mere spectator of these dreadful scenes, whose termination cannot be foreseen. There is, however, a powerful means to which you must then necessarily have recourse, viz. magnetism. Far be it from me to admit the reveries of the magnetizers; but it is quite certain that Mesmerism produces a most extraordinary effect upon the nervous system of the women we are now alluding to. I have convinced myself of this a great number of times. I have seen the pains dissipated as if by enchantment." 725.

This volume, as we have said, concludes the present work; but others upon Operative Medicine are to follow.

Periscope;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

Notices of some New Works.

PULMONARY CONSUMPTION, SUCCESSFULLY TREATED WITH NAPHTHA. By *John Hastings*, M.D.

DR. HASTINGS states, that the reason which induced him to deviate from that line of medical practice, which has so universally, and for so long a time, been in vogue, for that which he now brings forward, was the fatal termination of all cases, whatever was the treatment adopted, during an experience of upwards of twenty years.

From the greasy nature of tubercle in its crude state, Dr. Hastings concluded, that carbon entered largely into its formation, and that its composition had a striking resemblance to fatty matter. Among the changes in the earlier stages of pulmonary consumption, the disappearance of the fat is about the most remarkable; in consequence of this loss of fat, the author determined to employ those compound agents rich in carbon and hydrogen, which had not been previously used in medicine; "not with the idea that they would make up the deficiency which the system had sustained in the progress of the disease, but that such a change would by that means be introduced into the constitution as would act upon the forces of the organism at the point of departure from health, whether that took place in the stomach, blood, or elsewhere;—that change tending to such an affinity in the elements within the body, that the carbon, hydrogen, oxygen and nitrogen, instead of assisting in the formation of products which threaten life, would tend to develope those materials only which are required for the perpetuation of health, and the prolongation of existence."

Accordingly, Dr. Hastings was led to employ naphtha as a remedy in pulmonary consumption. Many different compounds pass under this name, but the kind of naphtha termed *pyro-acetic spirit*, obtained by the destructive distillation of an acetate, generally of lead or lime, and in its outward form scarcely distinguishable from pyroxilic spirit, is the species which is considered to be the best suited for this purpose.

The following is the way in which Dr. Hastings employs the remedy.

"I administer naphtha three times a day, in doses of fifteen drops for an adult, mixed with a table spoonful of water, which is proportionably decreased according as the patient approaches youth. After the second or third day, I increase the dose by about one-fourth; regulating its increase or decrease, according to the absence or presence of nausea, sickness, or any other untoward symptom arising out of its use. As the disease advances, I increase the dose to forty and even fifty drops, and administer it four times a day, instead of three times."

"The successful use of naphtha, as an internal remedy, induced me to try its

effects by inhalation, to which I was the more inclined from the results of the following experiments:—

"1st.—A little naphtha having been put into a bent tube, resembling the capital U, some expectorated matter was poured upon it, which had been determined with the microscope to be rich in globules of tubercle. Gentle heat was then applied, and the naphtha driven off, when the super-imposed secretion presented a mere shapeless mass of animal matter, the globules having entirely disappeared.

"2nd.—Some tuberculous secretion, highly charged with globules of tubercle, was placed under the field of the microscope, and a drop of naphtha added, when an immediate disappearance of the globules ensued, leaving behind a mass of the same character as on the former case. The frequent repetition of this experiment, invariably led to the same result.

"3rd.—Some tuberculous secretion of the lungs was put into a portion of the intestine of a child, and placed over a wide-mouthed bottle, which contained a small quantity of naphtha, between which and the intestine a clear space of three inches remained. A spirit lamp was then placed under the bottle, and a very gentle heat applied until slight ebullition took place, which was continued for an hour. The contents, when removed from the intestine and examined with the microscope, presented the same appearance as described in the previous experiments.

"Considerable benefit resulted from the inhalation of naphtha, in lessening the difficulty of breathing in the most advanced cases, in rendering muscular efforts less painful and fatiguing, and in a general alleviation of all those symptoms which distress the consumptive patient. The expectoration is not unfrequently rather increased immediately after the inhalation of naphtha, but the cough has changed for one of a milder character. Improvement was generally observed to follow that kind of inhalation which was performed with little exertion. It may be employed several times in the day, unless it produces nausea and sickness, when its use should be suspended; and on its being resumed, in such cases, it should be applied for a shorter period. When there is spitting of blood, its use is not admissible."

"Almost immediately after naphtha has been administered, an occasional rising of the medicine is perceptible in the mouth and throat, similar to that which occurs after a dose of castor oil. This is sometimes followed by nausea, and now and then vomiting supervenes. At other times it acts, but much more rarely, as an aperient. But when these effects occur, they usually subside in a day or two. It not unfrequently produces a glow in the region of the stomach, which extends over the chest and creates a sensation of cheerfulness and a greater freedom of breathing. It appears deserving a high rank among tonics; for in most of the cases in which it has been employed, a natural appetite was in a short time established. No remedial agent that I am acquainted with possesses such power over the colliquative perspirations of pulmonary consumption; as a few doses, in most instances, appeared sufficient to effect their removal. Another fact worthy of remark, is the absence of diarrhœa in all cases, which may be accounted for upon the supposition that tubercular deposit ceases to take place in the mucous track of the intestines. And even in those cases where diarrhœa, in the first instance, existed, it readily yielded to the naphtha treatment. The thirty-third case is a good example of this remark. Headache, particularly when the bowels are confined, is sometimes the effect of the naphtha treatment, and if aperients fail to give relief, a mustard poultice should be applied to the back of the neck, or a few leeches to the temples, or behind the ears. It will, however, be very seldom necessary to suspend the employment of the naphtha from this cause."

According to Dr. Hastings, from the very first moment he employed Naphtha in Pulmonary Consumption, up to the present time, it has been so successful in his hands, that he has no doubt it will be found, if used judiciously, to be little less than a specific in the earlier stages of the disease. And, from what he has

more recently observed, he is most sanguine that, even in the latter stages of the disease, a restoration of health may generally be calculated upon.

"The progress of improvement in the physical signs, when sufficiently marked, invariably commenced with an amendment of the sounds arising from percussion. In no case did they appear to begin by those of auscultation; consequently I am induced to form the opinion that, as diagnostic signs, those derived from auscultation take precedence of those from percussion, or, in other words, that changes such as prolonged expiration, and very slight feeble and harsh respiration, may be detected by auscultation, when the sound elicited by percussion is not sufficiently appreciable to lead to any useful conclusion considered apart from auscultation."

Many cases are narrated in which the naphtha was employed.

IF experience proves the correctness of these statements, Dr. Hastings will, no doubt, be considered a benefactor to the human race.

On the Arrangement and Nomenclature of Mental Disorders.

By *Henry Johnson*, M.D.

This Essay obtained the premium offered, in 1842, by the Society for the Improvement of the Condition of the Insane, for the best Treatise "On the Arrangement and Nomenclature of Mental Disorders."

The arrangement adopted by Dr. H. Johnson is a pathological one, and is as follows:—

Class.—Mental Disorders.

Order I.—*Congenital*:—Amentia.
- Idiotism.
- Imbecility.
- Cretinism.

Order II.—*Inflammatory*:—
- Phrenitis—*Acute*.
- Hypophrenitis—*Sub-acute*.
- Insania—*Chronic*.
  - (*a*) Moral Insanity—
    - Pathomania.
  - (*b*) Intellectual Insanity—
    - Mania.
    - Hypomania.
    - Dementia.

Order III.—*Non-Inflammatory*:—
- Delirium.
- Hypochondriasis.

Of the first Order we need say nothing.

Hypophrenitis is the delirium tremens of other authors. Dr. H. Johnson, however, considers this term as more expressive of its peculiar nature than the old; delirium tremens being, in his opinion, neither more nor less than phrenitis, but occurring from a peculiar debilitating cause, and in a constitution weakened by excess.

Insanity.—Dr. H. Johnson remarks, that proofs of inflammation have been discovered in protracted cases of insanity. "And, if the effects of inflamma-

tion be discovered in the brains of the Insane, surely Insanity, if not identical with, must be nearly allied to inflammation? I conclude, therefore, that the proximate cause of Insanity, is a chronic inflammation of the brain, and hence my reason for placing it in its present position in my arrangement."

Moral Insanity is the *Pathomania* of Dr. Prichard. It consists essentially, in a perversion of the usual habits and feelings, without delusion. The patient is wayward, eccentric, and extravagant in his conduct, but has no proper mental delusion or hallucination.

Hypomania.—This term Dr. H. Johnson proposes to substitute for monomania, as signifying a slighter form or lower grade of mania. "In this there is delusion, on one or more subjects, connected or unconnected. Sometimes the delusion is very persistent, sometimes it changes from day to day. The patient is, however, not violent, nor unmanageable. He has not the furious look of a maniac, but has more the appearance of a person in ordinary health.

Dementia.—This, in its last stage, fatuity, is characterised by the annihilation of the mental powers: it is to be distinguished from idiotism, by its not being congenital. It is usually the termination of mania. Dr. H. Johnson thinks that a new name, to be derived from the Greek language, might be advantageously substituted for the present one; he is, however, unwilling to suggest any unnecessary innovations of this kind.

Delirium.—This is classed amongst the non-inflammatory affections. The author looks upon delirium as always a symptomatic affection, depending upon some disease going on at the same time in the system. It appears to depend on an anormal condition of the circulation within the brain.

Hypochondriasis.—"This is chronic dyspepsia, attended with peculiar lowness of spirits, desponding habits of mind, and undue attention to every uneasy bodily feeling. It is easily distinguishable from Insanity by the absence of any delusions, and by the prominence of the dyspeptic symptoms. It is said sometimes to lapse into Insanity, but this is not a frequent occurrence. The disease seems to commence with irritation of the organic or ganglial system of nerves, and the irritation is propagated by a species of reflex operation, first to the brain, producing the morbid state of the feelings, so characteristic of the disease, and from the centre of the nervous system, towards its extreme branches, in various parts of the body.

"I have no doubt that the tendency of the disease is hereditary; and, from what I have been able to observe, it appears to me, that the descendants of the ancient Cymri are peculiarly liable to it."

We see much, very much, to condemn, little, if anything, to approve of, in this proposed "arrangement and nomenclature of mental disorders."

THE IODATED WATERS OF HEILBRUNN IN BAVARIA, CONSIDERED WITH REFERENCE TO THEIR EFFICACY IN THE TREATMENT OF SCROFULOUS, CUTANEOUS, AND OTHER DISEASES. By Sir *Alex. M. Downie*, M.D. Physician to Her Britannic Majesty's Legation at Frankfort. Duodecimo, pp. 92, 1843.

This little volume consists chiefly of condensed extracts from a large work, (the 4th edition, of Dr. Wetzler,) on the same subject, by the learned German author

who resides in the vicinity of a Spa which will probably take rank with Kissengen, Marienbad, or even Carlsbad, before many years.

The village of Heilbrunn is situated in a romantic spot in Upper Bavaria, between Flecken-Tolz, and Benedictbeuren, eight German miles from Munich. The *Quelle* of Heilbrunn rises between two eminences, and is said to be the oldest of all the Bavarian Spas. In 1659, it experienced a piece of good fortune, by contributing to the increase of the Elector's family, and its prolific virtues were speedily bruited about among the ladies, so as to establish its reputation. The neighbouring monks, however, became jealous of the Spa, and nearly ruined it, till, after nearly two centuries, (1805,) its renown was again revived by a German physician, (Graff,) who wrote a book on the waters. In 1825, Professor Vogel was employed to analyse the water, and he discovered the existence of iodine in the spring. This was afterwards corroborated by Wetzler. In compliment to the Queen of Bavaria, it now received the name of "ADELHEID QUELLE."

The following formula employed by Struve at Berlin, is supposed by Sir A. Downie, to be as nearly as possible, the analysis of the Spa in question.

(In the pint.)

Iodate of Soda	0,2000
Bromate of Soda	0,4090
Muriate of Soda	38,1540
Carbonate of Soda	6,8112
Sulphate of Soda	0,0072
Carbonate of Potass	0,2355
Carbonate of Ammonia	0,1203
Carbonate of Lime	0,6271
Carbonate of Magnesia	0,3974
Carbonate of Strontian	0,0517
Carbonate of Baryta	0,0221
Carbonate of Iron	0,0162
Carbonate of Manganese	0,0016
Silica	0,2562
	47,2906

The taste is decidedly saline, with an *apres gout* of sulphur. The whole resembles a mixture of sea-water with that of Harrogate. It is perfectly clear, and suffers little by transportation. The spring does not throw up more than seven or eight hogsheads *per diem*, and therefore little can be spared for baths. The whole supply is nearly expended in bottling for exportation.

"The usual dose for children is from two to six ounces a day, and for adults as much as three quart bottles per diem have been ordered." 38.

"According to Geiger the Adelheid's Quelle may be prescribed with advantage in the following diseases.

"1st. Loss of Appetite and Indigestion.

"2d. Chronic affections of the Liver and Spleen.

"3rd. In Ague and Jaundice.

"4th. In disease of the Kidneys from Calculous deposits.

"5th. In Chlorosis, Affections of the Womb and Sterility.

"6th. In Hypochondriasis and Melancholy.

"7th. In chronic Erysipelas, cutaneous diseases, as Psora, Porrigo, &c.

"8th. In gouty affections, stiff and enlarged joints, Palsy, &c." 46.

Cases, in illustration, are selected by the author from various German writers, and with these the little work concludes.

PRINCIPLES OF FORENSIC MEDICINE. By *William A. Guy*, M. B. Cantab. Part 1.

The contents of this part consist of Medical Evidence—Personal Identity—Age—Sex—Impotence—Rape—Pregnancy—Delivery—Fœticide—Infanticide—Legitimacy.

It appears to be plainly and sensibly written, containing much important information, condensed, without producing obscurity, into a small space. It is, of course, quite impossible to give any analysis of such a work, but we may extract the following history, drawn from the observations of Orfila, of the process of ossification as a means of determining the age of the dead.

"At 2 *months*, ossification of the os magnum, os cuneiforme, and os cuboide.

"At 4 *months*, ossification of the branches of the os hyoides.

"At 5 *months*, ossification of the lower apophyses of the os hyoides.

"At 6 *months*, an osseous point in the ensiform cartilage, and in the anterior arch of the atlas. Bony union of the body and alæ majores of the sphenoid bone.

"6 *months to* 1 *year*. Ossification of the cribriform and nasal plate of the ethmoid bone.

"1 *year*. An osseous point in the first bone of the coccyx, in the great tuberosity of the humerus, in the head of the femur and tibia, in the first cuneiform bone, in the coracoid process of the scapula, and two points in the odontoid process of the second cervical vertebra. There is bony union of the two portions of the posterior arch of the vertebræ, and of the several portions of the temporal and ethmoid bones.

"2 *years*. Ossification of the epiphyses of the metacarpal and metatarsal bones, an osseous point in the inferior extremity of the radius and fibula, in the transverse process of the seventh cervical vertebra, and in the base of the sphenoidal cells; and bony union of the two points of the odontoid process.

"$2\frac{1}{2}$ *years*. Patella and lesser tuberosity of the humerus ossified.

"3 *years*. Bony union of the body of the second vertebra with the odontoid process, and of the three portions of the fourth and fifth bones of the sacrum.

"3 *to* 4 *years*. Ossification of the great trochanter of the femur, the cuneiform bone of the carpus; and bony union of the styloid process of the temporal bone.

"4 *years*. Ossification of the second and third cuneiform bones.

"4 *to* 5 *years*. Ossification of the trapezius and lunar bones, formation of the ethmoid cells, and bony union of the body and process of the second cervical vertebra.

"5 *years*. Ossification of the upper extremity of the fibula, of the epiphyses of the phalanges of the carpus, and of the epiphysis of the third phalanx of the great toe.

"6 *years*. Ossification of the lower extremity of the ulna, of the pisiform bone, and of the epiphyses of the first phalanges of the 2nd, 3rd, 4th, and 5th toes.

"7 *years*. Ossification of the internal condyle of the humerus, and of the first piece of the coccyx.

"7 *to* 8 *years*. Osseous point in the olecranon.

"8 *years*. Osseous point at the upper extremity of the radius.

"8 *to* 9 *years*. Ossification of the scaphoid bone of the carpus, and of the osterior epiphysis of the os calcis. Bony union of the two osseous points forming the head of the humerus.

"12 *years*. Osseous point on the inner edge of the lower articular surface of e humerus.

"13 *to* 14 *years*. Ossification of the lesser trochanter of the femur.

"13 *to* 15 *years*. Three portions of the os innominatum firmly united by bone. Cartilages of larynx sometimes found partially ossified.

"15 *years*. Osseous point in the inferior angle of the scapula. Bony union of the parts of the sacrum to each other, of the coracoid process to the body of the scapula, and of the two portions of the os calcis.

"15 *to* 16 *years*. Osseous point in the summit of the acromion.

"15 *to* 18 *years*. Osseous point in the sternal extremity of the clavicle, bony union of the sphenoidal plate to the body of the sphenoid bone, and formation of the spinous processes of the sacrum.

"15 *to* 20 *years*. Ossification of the last bone of the coccyx.

"16 *years*. Osseous point in the cotyloid cavity, in the head of the thigh bone, and in the head and tubercles of the ribs.

"17 *to* 18 *years*. Ossification of the margin of the scapula. The epiphyses of the phalanges of the fingers and toes joined to the bodies of those bones.

"18 *years*. Osseous points in the summit of the transverse and spinous processes. Bony union of the two trochanters and of the head of the femur to the body of the bone.

"18 *to* 19 *years*. Bony union of the epiphyses of the metatarsal bones.

"18 *to* 20 *years*. Bony union of the epiphyses of the metacarpal bones, of the lower extremity of the femur, and of both extremities of the humerus to the body of their respective bones.

"18 *to* 25 *years*. Union of the body of the sphenoid to the occipital bone, of the three pieces of the tibia, and of the marginal epiphysis of the ilium.

"21 *years*. Union of the lower extremity of the femur to the body of that bone.

"20 *to* 25 *years*. Union of the first piece of the sternum to the rest of the bone, of the transverse and spinous processes of the vertebræ to their bodies, and of the tubercle of the rib to the body of the bone.

"25 *years*. Formation of the laminar epiphyses of the iliac surface of the sacrum.

"25 *to* 30 *years*. Complete union of the first to the second bone of the sacrum, and of the epiphisary discs of the vertebræ.

"40 *to* 50 *years*. Union of the ensiform cartilage to the lower extremity of the sternum.

"40 *to* 50 *or* 60 *years*. Union of the sacrum and coccyx.

"The state of the osseous system will also furnish some clue to the age, especially during the latter periods of life. The internal cavities of the bones increase, from the absorption of the osseous matter, and the bones from the same cause become lighter. The bones of the head are solidly united, but, on account of the absorption of their diploe, become thin. The lower jaw becomes shallow, the alveolar processes are absorbed, and the angle again becomes obtuse, as in childhood. The spinal column is curved. The cartilages of the larynx and ribs are completely ossified. The osseous tissue generally is more dense, dry, and fragile, and abounds in earthy materials. In advanced age, moreover, the heart and arteries become more or less extensively ossified."

THE VITAL STATISTICS OF SHEFFIELD. By *G. Calvert Holland*, Esq. M. D.

This is a very elaborate work on the statistics of the town of Sheffield, more especially as relating to the several branches of manufactures, the condition and habits of the workmen, and various points of local interest. We will extract some remarks on the fatal effects of "dry grinding."

Fork-grinders.—This occupation is perhaps more destructive to human life than any pursuit in the United Empire; it exceeds, however, only in a few degrees many other branches of grinding. Fork-grinding is always performed on a dry stone, and in this consists the peculiarly destructive character of the branch. In the room in which it is carried on there are generally from eight to ten persons at work, and the dust which is created, composed of the fine particles of stone and metal, rises in clouds and pervades the atmosphere to which they are confined.

"The dust which is thus every moment inhaled, gradually undermines the vigour of the constitution, and produces permanent disease of the lungs, accompanied by difficulty of breathing, cough, and a wasting of the animal frame, often at the early age of twenty-five. Such is the destructive tendency of the occupation, that grinders in other departments frequently refuse to work in the same room, and many sick clubs have an especial rule against the admission of dry grinders generally, as they would draw largely on the funds from frequent and long-continued sickness."

The mortality is tremendous. Of 61 persons, engaged in this occupation, 35 died under 30 years of age; 47 under 36 years. Only one attained the age of 48, and he had been fifteen years in the army before entering into this trade.

To form a proper idea of this mortality, it is necessary to compare it with the ratio of deaths at different periods in other classes.

"Thus in 1,000 deaths of persons above 20 years of age, the proportion between 20 and 29 years, in England and Wales, is annually 160. In Sheffield, 184; but among the fork-grinders, the proportion is the appalling number 475; so that between these two periods, three in this trade die to one in the kingdom generally.

"Between the ages of 30 and 39, a still greater disparity presents itself. In the Kingdom, 136 only in the 1,000 die annually between these two periods. In Sheffield, 164; but in the fork-grinding branch, 410; so that between 20 and 40 years of age, in this trade, 885 perish out of the 1,000; while in the kingdom at large, only 296. Another step in the analysis, and we perceive that between 40 and 49, in the kingdom, 126 die: in this town, 155; and in this branch, 115, which completes the 1,000. They are all killed off. For in carrying forward the inquiry we observe that between 50 and 59, in the kingdom, 127 die; and in Sheffield, 155: but among the fork-grinders, there is not a single individual left. After this period of life, there are remaining in the kingdom, of the 1,000, 441; and in the town, 339; but none in this branch of manufacture."

In 1841, ninety-seven adult workmen were employed in this trade. Of these ninety-seven, about thirty are at this moment suffering, in various degrees, from the disease peculiar to this occupation, viz. grinder's asthma.

"The disease is seated in the lungs and the air-passages, and the progress of it is accompanied with the gradual disorganization of these important organs. In its advanced stages, it admits neither of cure nor of any material alleviation. In the early stages, the only efficient remedy is the withdrawal from the influence of of the exciting cause; but how is this to be effected by men who depend from day to day upon their labour, and whose industry from early life has been confined to one particular branch? Here, then, is the melancholy truth, that nearly one-third of this class of artisans, in addition to the poverty and wretchedness common to the whole, is in a state of actual disease—and disease which no art can cure. Fiction can add no colour or touches to a picture like this. Truth transcends the gaudy embellishments of imagination. The distempered fancy has here no room to exercise her powers."

SOME ACCOUNT OF THE EPIDEMIC OF SCARLATINA, WHICH PREVAILED IN DUBLIN, FROM 1834 TO 1842 INCLUSIVE, WITH OBSERVATIONS. By *Henry Kennedy*, M.B.

For the last eight years scarlet fever has prevailed in Dublin to a great extent, and with symptoms of very considerable severity. Dr. Kennedy, who has had extensive opportunities of observing the epidemic, considers that it may be classed under the head of "scarlatina maligna;" not that every case put on the malignant form, but on account of the high proportion of deaths to the numbers attacked.

Pathologicol Appearances.—Dr. Kennedy divides the disease into two forms—first, the simply malignant; second, the complicated malignant.

In the first of these, the appearances on the surface of the body varied a good deal. In the greater number of cases, however, there were large dark petechiæ, or vibices, especially about the clavicles and groins. On cutting into these, little if anything was found to account for the mark so apparent on the surface; no extravasation was detected in any instance. In the head, chest, and abdomen, it may be stated generally that nothing but congestion, varying in degree in different cases, was found. The state of the throat in this form of disease was quite of secondary importance; during life it was often not complained of at all, after death some ulceration, of the upper part of the tonsils in particular, was found, unattended with any swelling.

The second form of the disease, to which Dr. Kennedy gives the name of "complicated malignant," owed its severity, in part, to the upper portion of the throat and its neighbourhood becoming engaged. In general the swelling of the neck occupied both sides; this swelling was often immense, encircling the neck like a cravat, and sometimes spreading down to the clavicles; in one case it engaged the pectoral muscles, rendering them as hard as a board. This tumefaction subsided considerably after death; on cutting into it in an early stage, effusion of serum, with a turgid vascular state of the lymphatic glands, was all that was found; at a later stage, pus of an unhealthy character was discovered, either infiltrated through the textures, or collected into a distinct abscess or abscesses. If the inflammation pursued the course of common abscess, the case usually did well: frequently, however, sloughing of the parts took place, proceeding with great rapidity, in some instances causing death by hæmorrhage from the coats of the large vessels becoming involved.

Sometimes the inflammation, after spreading down the neck, invaded the sterno-clavicular articulation, giving rise to abscess in the joint, or destruction of the cartilages.

Another form of swelling of the neck, to which the author directs attention, was caused by the effusion of nothing but lymph; this was rapid in its progress, at least to a certain point, for when the swelling had reached its height, it seemed at once to become stationary, in fact it rarely went on to form abscess. The hardness in these cases was excessive.

With regard to the condition of the internal fauces, two affections more particularly came under Dr. Kennedy's notice, viz. diphtherite, and œdema of the glottis. Both of these were accompanied by ulcerations, varying in extent and number—thus there was very constantly one in the upper part of either tonsil, with irregular edges, and of considerable depth. Ulcers were also found about the chordæ vocales.

Sequelæ.—In some cases, when the patient was to a certain degree convalescent, it was found that the child's neck had become crooked, and that when any attempt was made to bring the head straight, it caused severe pain referred to

the upper part of the neck, and commonly to one side. This may have arisen, in some instances, from the inflammation of the throat spreading to the neighbouring textures, so as to engage those of the spine, and sometimes in this way cause caries: in other cases it occurred where there had been swellings of the neck, with the effusion of lymph, this effusion taking place about the small muscles of the nape of the neck, and sometimes in the upper portion of the trapezius; it was attended with some pain on pressure, and was very difficult to remove. In a third set of cases it arose from a spastic state of the muscles on one side of the neck, more particularly engaging the sterno-mastoid, and appeared to be caused by the patient lying in one position in bed for a considerable period.

Another sequela of the disease consisted in the inflammation spreading into the Eustachian tube, and so reaching the internal ear, causing abscess and exfoliation of the small bones. At other times, an abscess formed in the parotid region, and burst into the ear.

Purulent effusion into the joints was another and most formidable sequela of this epidemic. Sometimes only one of the large joints was attacked, at other times three or four were found to be full of pus. The synovial membrane was commonly healthy, though at times it was found intensely injected and coated with lymph. The same remark may be made of ulceration of the cartilages. In some very severe cases, the epiphyses separated from the shafts of the long bones. The internal organs were not affected in these cases.

The milder forms of the disease were frequently complicated by internal lesions. Of these the attacks of the chest were the most frequent and most serious. Dropsical effusions were also often present. In these cases, as a general rule, the kidneys were quite healthy, whether the urine was or was not albuminous. In other cases again, great congestion of these organs existed, sometimes to so marked an extent, that it appeared to have enlarged the kidney. In three instances, one of the stages of Bright's disease was very well marked; the kidneys were a good deal larger than natural, and their texture soft; and when the fibrous coat was taken off, the surface was distinctly mottled as if from the deposition of lymph.

Symptoms.—The invasion of the disease was generally sudden, the symptoms being commonly referred to the stomach. The stage of collapse rapidly followed, marked by its usual symptoms; there was seldom any distinct rigour, it was more of a creeping or shuddering, and often existed with a warmer state of the surface. The average duration of this stage of collapse was from two to five hours, when reaction set in, and the more prominent symptoms of the disease made their appearance. Sore-throat was constantly met with, varying from simple redness to the most extensive sloughing. Chronic enlargement of the tonsils, and an unnatural redness of the throat, remained for an indefinite time in some cases. The tongue very frequently did not present the usual appearance said to be so characteristic of scarlatina. The pulse was usually much quickened; during the stage of collapse, it was weak and indistinct; but in from eight to twelve hours it had again developed itself, and was to be found ranging close to 120. From this period it steadily declined in strength, till about the fourth day, when (supposing the patient did well) it again began to improve in tone and vigour, and its frequency became lessened. In those instances where the disease was more like a plague than scarlatina, that is where there was little if any reaction, it at times happened that no pulse could be felt at the wrist for several hours before death. The eruption varied considerably in its intensity; in its most severe form, it was in one continuous sheet over the whole surface. In other cases, it presented itself in great patches of a very bright colour, as large as one's hand would cover, but which were entirely separate one from the other. In both these cases spots of purpura occasionally appeared sub-

sequent to the general eruption. If the eruption appeared in the following manner, the disease was sure to prove of a very severe form. "A case would occur in which the eruption of the common character had come fully out; it might or might not be favourable, but on the following day an additional crop would make its appearance; this was usually of a brighter colour, and much better defined than the first: and what was curious about it was, that this last eruption might disappear again, leaving the skin only covered with the first."

In many instances nothing but large dark petechiæ were visible, about the clavicles and inguinal regions, often running down the inner side of the lower limbs. Sometimes there was merely lividity of the hands, feet, and depending portions of the trunk. In many cases, where there was very little eruption, the skin of the hands, particularly where the nails join it, assumed a very peculiar red and shining aspect, without any swelling. These were all very severe cases.

As a general rule, the fever presented either the irritative or the typhoid form; very rarely indeed was it of the sthenic inflammatory type.

Treatment.—The line of treatment on which Dr. Kennedy placed most reliance, and which he used in the majority of instances, was as follows:—stimulant emetics—warm baths—tepid or cold sponging—cold affusion to head—internal stimulants—diluents—free application of nitrate of silver to the throat, followed by soothing treatment—occasionally the internal administration of opium. "Such, modified by the peculiarities of each individual case, was the plan of treatment adopted, and the one which, under analogous circumstances again, I would certainly have recourse to."

Numerous cases are detailed; and the volume closes with an appendix, containing an account of an epidemic of scarlatina which prevailed in the County of Armagh, during the year 1842, communicated by Dr. Lynn, of the Market-hill Dispensary.

CONTRIBUTIONS TO THE MATERIA MEDICA. By *Fr. Simon.*

I. CHEMICAL CAUTIONS IN THE WRITING OF PRESCRIPTIONS.

It is a prerogative of modern times, for which, according to some, we are indebted to homœopathy, that the writing of prescriptions is no longer conducted in that complex and confused manner, where for every symptom a remedy stood on paper, and where possibly one, two, or more remedies became ineffective by reason of mutual decomposition, or else exercised an entirely different effect from that intended; but now medicines are ordered in a form as little complex as possible, or even in a simple form altogether. Still, notwithstanding this essential improvement in the writing of prescriptions, it sometimes occurs, that the physician, deficient altogether in a knowledge of chemistry, unfortunately selects the few remedies he employs in such a manner, that they chemically destroy each other, and act either not at all, or in a different manner from what he expected.

Independently of the inconvenience hence resulting both to the patient and the cure in general, but which may be soon discovered and again rectified by a prudent physician well versed in the practice of such cases, we must now consider another inconvenience of a far more serious import. The recipe is in a certain way the only written document, which the physician gives to the apothecary and to the public at large with respect to his conduct and mode of treatment. The apothecary soon sees the faults committed against the laws of chemical affinity, and the public must observe them, when the medicine obtained, whether mixture, solution, &c., exhibits entirely different properties from what the physician assigned it. Now, though the apothecary is sometimes so com-

plaisant as to take the blame to himself, this however does not always happen, and the physician necessarily loses in character.

The study of chemistry, considered from this point of view, is urgently necessary to the physician for daily use; but it embraces a field far too extensive to be acquired with anything like facility. Hence it occurred to us, that some general rules may prove not unacceptable, which may serve as a clue to enable practitioners to shun those gross chemical blunders in the writing of prescriptions.

1. SUBSTANCES MUST NOT BE PRESCRIBED IN SOLUTION WHICH ARE INSOLUBLE.

A. *The Aqueous Solution.*

As the aqueous solution is the most usual, the most frequent errors are committed in this instance. It is known that water dissolves the so-called soluble salts, extracts, gum, sugar, and soaps, not resins, oils, fats, balsams, camphor, nor sulphur, phosphorus, iodine, calomel, &c.

With respect to the salts, or saline combinations, it is necessary to exhibit some which are insoluble or nearly so, though they are still prescribed in the form of solution; we must, however, impart to them solubility by means of other salts which are soluble; in cases of this kind errors are not infrequently committed.

The following substances are insoluble, or nearly so:—

Magnesiæ carbonas and m. usta—ferri prussias, et f. phosphas.—pulvis antim. compos.—antimonii sulphuretum auratum,—antim. sulphuretum rubrum,—zinci carbonas, zinci cyanidum, and some other metallic cyanides—to these, also, may be added the pure vegetable alkalies, quinine, cinchonine, salicine, and the sulphate of quinine, so often prescribed in solution; which is dissolved in pure water in extremely small quantity, but readily in water slightly acidified with sulphuric acid.

Of the combinations of iodine and bromine, those of iron are readily soluble—the same may be said of the iodine of zinc—iodide of gold is insoluble—the perbromide and protobromide of mercury are very difficult of solution—the periodide and iodide of mercury are insoluble.

With respect to the solution of extracts, it should be observed, that this is perfect in but few cases; partly because the extracts become changed, and a part is rendered insoluble by its combination with oxygen, partly because they contain resinous combinations, especially if they have been prepared by means of alcohol; in these cases the solution is turbid, being partly of a brownish, and partly of a greenish colour.

B. *The Alcoholic Solution.*

Alcohol chiefly dissolves resins, ethereal oils, balsams, soaps, camphor, and iodine. Of the salts, alcohol dissolves more especially the combinations of chlorine soluble in water, or bichloride of mercury, the chloride of gold, chloride of iron, &c.—the acetates and lactates, the carbonates, sulphates, and phosphates are not at all soluble in alcohol. Alcohol dissolves but a very small quantity of sulphur and phosphorus.

The alcoholic solution of resins, ethereal oils, balsams, camphor, and iodine are thrown down on the addition of water. The salts not soluble in alcohol, gums, also, several extracts, are thrown down from their aqueous solution, by adding alcohol.

C. *The Ethereal Solution.*

Sulphuric ether dissolves fat, ethereal oils, camphor, phosphorus, and some

combinations of chlorine, as chloride of iron, chloride of gold, and chloride of mercury.

D. *The Oily Solution.*

The ethereal oils combine with fluid and solid fats; they dissolve camphor, sulphur and phosphorus, the Dippel oil in great quantity; they are soluble in alcohol. The fatty oils mix with the ethereal oils; they also dissolve camphor, sulphur, and phosphorus; in æther they are readily soluble, in alcohol but slightly so.

When a substance is given in solution, the most indifferent solvent must be employed, lest, when a full dose is to be administered, the action of the solvent should predominate.

2. NO SUBSTANCES SHOULD BE PRESCRIBED TOGETHER, WHICH MUTUALLY DECOMPOSE EACH OTHER.

This is a principle which may easily be defended, but it is one which must find a stumbling block raised by usage. But why do we not endeavour to remove this block by the aid of science, a block, too, not set up by justice, but by mere custom? Were there no re-action in science, we should make no advance, and use and authority, however badly grounded, would become laws. We do not mean to say any thing here against the black and red wash, nor against Goulard's mixture, and several other preparations of that kind. These are useful preparations in the cases where they are indicated. We here intend to guard our readers against those unchemical formulæ where the intention, as well as the character, of the practitioner simultaneously suffer.

The following general rules may probably serve many a practitioner as a clue, wherein it is to be remarked, that in reference to the medicine which is to be prescribed, and that which is to be avoided, a reciprocal relation always naturally exists.

When salts of baryta, of lead and of lime are ordered, sulphates and free sulphuric acid are to be avoided, as the sulphuric acid yields white precipitates, difficult of solution with salts of baryta, of lead and of lime.

When salts of silver and salts of lead are prescribed, the hydrochlorates and free hydrochloric acid are to be avoided as the chloride of silver is insoluble, and the chloride of lead is difficult of solution.

When metallic salts are prescribed, care must be taken to avoid:—

a. Combinations of sulphur, especially those that are soluble, as sulphuret of potassium, or of ammonium, as the insoluble black or yellow, or reddish-coloured metallic sulphurets are precipitated. Even when both the metallic salt as also the sulphur-combination are insoluble, their combination should be avoided. Insoluble sulphur-combinations with such as are soluble, may be prescribed together.

b. Soluble carbonates, more especially carbonate of soda, carbonate of potash, as they form insoluble metallic carbonates; this is more especially to be remarked in the salts of iron, lead, copper, zinc, antimony and mercury.

c. The free alkalies and free earths, more especially the aqua ammoniæ causticæ, and the aqua calcis, are to be reckoned here: on mixing the metallic salts with these substances, the metallic oxides are generally thrown down in the state of hydrate. It is necessary to keep this in view when ordering substances for external use; as in ordering corrosive sublimate, calomel, acetate of lead, &c. &c.

d. Extracts, and especially those containing yellow colouring matter, (extr. of cascarilla, bark, rhatany, &c.)

All the metallic salts yield with the extracts, which, with few exceptions, contain a certain quantity of yellow colouring matter, insoluble, flocculent, dark-brown or black precipitates. These are particularly marked in the salts

of mercury, gold, silver, lead, copper, and iron, so that, ordinarily, if the quantity of extract is sufficiently great, the entire metallic salt is decomposed. In the case of mercury the precipitate is dark-brown, in that of gold violet-brown, in silver brown, in lead a dirty brown, in copper a green brown, and in iron black. The narcotic extracts act of course in the same manner. In a combination of acetate of lead, chloride of mercury, or nitrate of silver, with opium or extract of aconite, we must always expect a portion of the metallic salt to enter into combination with the extractive matter and with the vegetable acids of the extract. Usage sanctions such formulæ, but the physician can never account to himself to which combination he is indebted for the favourable effect produced in the case under treatment; in a fomentation, in an eye-water, consisting of acetate of lead, and tincture of opium, it may be that the acetate of lead does not at all come into action, but the acetate of morphium, the meconate and the tannate of lead may be the real agents; the same thing holds good with respect to the composition of the collyrium, consisting of sulphate of zinc and acetate of lead, wherein the insoluble sulphate of lead is formed, and an acetate of zinc continues in solution. If the practitioner attain his end with this, so much the better. Only if he proceeds rationally, he should know, which substances produced the effect.

e. Soaps. Soaps are decomposed by the metallic substances; combinations of the metallic oxides with the fatty acids are separated; this is more especially to be kept in view in the salts of iron, lead, and copper. To order insoluble metallic combinations with soaps, is not at all warranted.

f. Vegetable mucus. It is the salts of lead and iron, more especially, which combine with the mucus, forming insoluble gelatinous masses.

In ordering free or carbonated alkalies or earths, the free acids must be avoided, unless in the one case of effervescing mixtures. Saturations should contain a slight excess of free acid rather than of carbonated alkali. Certain extracts, and those especially rich in salts, but above all extr. aloes cum acid. sulphur. in like manner, decompose the carbonated alkalies, or the ammoniacal combinations formed sometimes by their being kept for a long time in considerable quantity, are broken up, and ammonia is evolved. Hence, in prescribing pill-masses, in which carbonated alkalies and vegetable extracts, as the extract. taraxaci. card. bened. absinth. or the extracts of narcotic plants are contained, great caution is required. The pills in which this action of the constituents on each other, and the development of a gas takes place, become after a time larger and larger, and may swell from the size of a pea to that of a small hazel-nut.

In ordering *sulphur combinations*, more especially sulphuretted alkalies (sulphuretum potassæ) free acids or acid salts must be avoided. But it must be considered that in a neutral fluid an acid may be generated through fermentation, and particularly in substances containing sugar, as for instance in the syrup of white poppies. This circumstance merits particular attention when ordering the kermes with sugar as a linctus. If an acid is generated here in consequence of fermentation, the golden sulphuret is decomposed, sulphuretted hydrogen is formed, and an antimonial oxide, which acts as an emetic.

It has been already mentioned that in ordering *sulphur combinations* metallic salts in the reguline metals must be avoided. In this respect it is only to be remarked in the case of pills, that we must avoid directing, that the pills in which sulphur combinations exist be covered with gold or silver leaf, as in a little time the metallic covering becomes black.

With respect to the ordering of *metallic salts*, very different in reference both to their action and to their chemical habitudes, as for instance, of the chloride of gold, nitrate of silver, acetate or sulphate of copper, acetate of lead, chloride of mercury, &c. cautions have been given in the foregoing observations. As these substances are frequently ordered in the form of pills, but when decompositions are to be avoided extracts must be shunned, conformably to the experiments which I have formerly instituted on this subject, I propose as a pill-mass

a mixture of the equal parts of the pulvis althææ and of sugar, with the necessary proportion of water. When there is no reason to apprehend that the metallic salts will act prejudicially on the organs of deglutition, the form of powder seems most advisable, and the saccharum lactis then appears to be the most appropriate constituent; however, in the case of corrosive muriate, chloride of gold, or nitrate of silver, the pilular form should be preferred. In solutions, however, these metallic salts, at least with respect to the eye, act still differently in reference to vegetable matters from what they do in the pilular form. An infusion of one ounce of chamomile flowers with ten grains of acetate of lead or nitrate of silver forms two parts, one a precipitate, wherein is the metallic oxide as a metallic salt, and a fluid wherein there is little more than water. These purely empirical formulæ might probably be exchanged for others more judicious and rational, but it would be better, if physicians would make themselves acquainted with the remedies they order, (in the above case the combinations of the acetate of lead or nitrate of silver with the organic, extractive and other matters) as they know, for instance, in the unguentum ext. decub. antenr., that it it is not the acetate of lead and yellow matter, but the tannate of lead that acts.

In ordering *the vegetable alkaloids* the xanthic acid and the vegetable substances containing yellow colouring matters must be avoided, as there are then formed insoluble combinations; hence it is, the substances containing yellow colouring matter are the most appropriate antidotes in cases of poisoning with the vegetable alkaloids. In the same case also iodine must be shunned; this too enters into insoluble combinations.

In ordering *soaps*, besides the metallic substances already mentioned, the earthy salts and the free acids and acid salts, as also the extr. aloes cum acido sulphur. must be avoided, by which latter remedies the fatty acids are separated; this is more particularly to be kept in view in ordering the sapo stibiatus from which not only the fatty acid is precipitated by the free acids, but also the sulphuret of antimony and hydrosulphuric acid gas is developed. A formula very prevalent in Berlin, but one by no means practically applicable, is the combination of the soaps with extr. al. c. acid. sulphur. corr. The fatty acid is constantly separated.

In like manner in ordering *the extracts* besides the *metallic salts*, the *free acids* must be avoided, by which a portion of the extractive matter is thrown down. Of the earthy salts alum is more especially to be remarked, which yields precipitates with the extracts, and more especially with the substances containing yellow colouring matter.

In ordering the *soluble earthy salts*, as *chloride of barium*, *chloride of calcium*, *sulphate of magnesia* and *alum*, *the carbonated alkalies* and phosphate of soda are to be avoided, by which free or carbonated or phosphated earths are thrown down. However it is to be remarked that the sulphate of magnesia is not thrown down by the bicarbonate of soda.

In ordering the *salts of potash*, more especially in the case of tartrate of potash, the free tartaric acid is to be avoided, by which bitartrate of potash is thrown down.

In ordering the simple tartrate of potash and also the double salts of tartaric acid, besides free tartaric acid other free acids also are to be avoided, more especially the mineral acids; the salts are decomposed in greater or less quantity, so that partly cream of tartar, and partly metallic combinations, are precipitated.

But likewise *acid vegetable remedies*, as the pulp of tamarinds, &c., when they meet with the tart. tartaris., throw down cream of tartar. This accounts for the sediments which occur so frequently in these popular aperient mixtures.

On saturating common vinegar in saturations, or prepared vinegar, or fresh lemon juice, vegetable substances separate in the form of flocculi; hence it is that these saturations are turbid; but the saturation with distilled vinegar is clear.

The other saturations may be filtered, in which case however there is a loss of carbonic acid.

The combination of calomel with chlorine-combinations, more especially hydrochlorate of ammonia, is frequently productive of mischievous consequences, which is assigned to the formation of corrosive sublimate; this is possible through the medium of the vital process; however it has not been demonstrated by investigations that have been made on the subject outside the animal body. On the contrary, the combination of calomel with the so-called absorbent earths, as carbonate of magnesia or prepared chalk, seems to act prejudicially rather than beneficially, as by these carbonated earths carbonate of mercury is formed, which is obviously more energetic than calomel, and acts differently from it.

Some metallic salts are decomposed in consequence of the accession of the oxygen of the atmospheric air, and especially in the aqueous solution; this occurs chiefly with the salts of iron, as the chloride of iron, lactate of iron, and the ioduret of iron. To prescribe these substances in the aqueous solution is not advisable; their mixture with sugar-juice is to be recommended in preference, and equally judicious is their exhibition in powder with sugar of milk.

It is scarcely necessary to mention that deliquescent salts in powder should be ordered not in boxes, but in bottles. Such are more especially the salts of potash, the tart. tartarisat., tart. ammoniat., potass. carb. etc.

To mix ointments with aqueous or spirituous fluids is possible only to a certain quantity; if the quantity of the aqueous or spirituous solution is too great, it does not combine with the fat. Hence it is not possible to combine the linim. sapon. comp. with an ointment, as the former substance is a solution of soaps in spirit, whereas, on the contrary, the liniment. ammon. blends very well with ointments. If it be necessacy to combine a great quantity of aqueous or spirituous substances with ointments, we must use the liquor ammoniæ causticæ as a connecting or binding medium, and partly saponify the fat.

In ordering phosphor. liniment, or ointments containing phosphorus, great caution is necessary that the solubility of the phosphorus in the fat be not overrated, otherwise particles of phosphorus continue undissolved, which may take fire on being rubbed in. One ounce of common fat dissolves from six to eight grains of phosphorus.

It is scarcely necessary to mention that when ordering eye-salves one cannot be too cautious with respect to the fatty acids of the salves ready prepared in the shops, which often baffle the best intention of the practitioner; for this reason an extemporaneous base of the salve should be selected, one prepared from almond-oil or wax. In ordering combinations of iodine, especially the iodide of potassium, the fatty acids must be avoided.

A TREATISE ON MENTAL DERANGEMENT. By FRANCIS WILLIS, M. D. Second Edition.

Dr. Willis states, that the attention of the public having been of late much directed to the treatment of the insane, more particularly as regards restraint or non-restraint, he has been induced to re-consider the observations published by him many years ago on the "Cure of Mental Derangement;" the result is, that he is firmly convinced not only of the efficacy, but also of the necessity of restraint in the management of insane persons.

However agreeable, he says, the idea that a system of kind and watchful treatment is only required, he feels convinced that this will not *alone* avail. "The minds of the insane must be operated upon by control, either in fact or in idea. The greater number may, and certainly ought to be, rendered tractable without bodily restraint; but we must attribute the orderly behaviour we are able to pro-

duce, to a consciousness of being under restraint, which all patients feel when placed under the care of those, whom they soon find they must obey, by being obliged, from the first, to take their meals and their exercise, to go to bed, and to get up at the appointed hours; and, but for this fortunate circumstance, we should have great difficulty in keeping an otherwise ungovernable patient in a state of quiet subjection."

Dr. Willis is of opinion that it was to the early and prompt adoption of restraint that the great success of his grandfather is to be attributed; and to following the same mode of treatment he feels indebted for having been himself equally fortunate. Notwithstanding the outcry raised against restraint, and more particularly against "those beneficial auxiliaries, the waistcoat, the chair, and the belt and gloves," he does not shrink from upholding them, believing it is the abuse of these, and not the use, which ought to be condemned.

"The public, surely," the author says, "cannot know what these restraints are, against which so much prejudice is attempted to be raised. A strait-waistcoat is only a sort of jacket, made of any strong material, as stout drill, with very long arms and strings. When applied, the arms are folded over the chest, and tied behind. It takes full possession of a patient in the most lenient way possible, enables us to give him food and medicine, and prevents his doing mischief to himself, or to those who attend upon him; and, if judiciously applied, may be worn by the most delicate female without the slightest injury. As to the chair, any strong chair with arms, so contrived that a patient cannot upset it, may be designated, 'the chair,' and is more particularly required when the patient is too restless to sit down, and would otherwise exhaust himself by standing. The belt and gloves, or the gloves alone, are a very useful as well as a very mild mode of restraint, and a good substitute for the waistcoat in those idiotic cases, in which the patient has a propensity to pick holes in his flesh, or pinch himself, or pull to pieces whatever he can put his hands upon." In short, he concludes that their use ought rather to be extolled as a mercy, than denounced as a degradation.

Dr. Willis conceives, also, that the late legislative enactments regarding the inspection of lunatic asylums, are calculated to increase considerably the numbers of the insane. Patients recently attacked, he says, are "grievously pained by the visitation, perhaps so seriously affected, as to have their recovery retarded or prevented altogether. What can be more heart-rending to a delicate mind than to be exhibited as a madman to these appointed inquisitors?"

"The framers of these laws can never, I conceive, have contemplated the mischief they are likely to produce on this class of patients. A delicate female, even in a sound mind, could scarcely see four and five strange men enter her room without feeling some alarm; and can it be supposed that persons, whose nerves are already shaken, and who require to be kept free from excitement, can receive these strangers with impunity? The annoyance to those who are conscious of their state is more painful than I can describe. To speak even leniently of this measure, it is a cruel interference with the domestic affliction of private life."

With regard to the introduction of a system of religious instruction and discipline into lunatic asylums, the author is of opinion that it is a strange anomaly that it should be deemed useful to introduce into an asylum, for the daily attention of insane persons, a subject which is itself a very common cause of insanity.

"However desirable it may be, either for the sake of example or for the sake of preserving an orderly behaviour among the insane, that they should attend Divine worship, I am of opinion that the system of religious discipline should cease with that attendance. I think that all attempts at religious instruction are not only useless, but often injurious; and this opinion is fully corroborated by experiments which have been made on the subject."

Dr. Willis concludes by asserting that, as his practice has been principally confined to the affluent, his adoption of restraint cannot be ascribed to the want of means in providing adequate assistance in carrying out the most vigilant surveillance; but it is from a thorough knowledge and decided conviction of its peculiarly salutary effects that he most conscientiously recommends it, and strenuously urges the superiority of positive restraints over every kind of superintendence or watchfulness whatsoever.

"I am aware that I cannot expect by my observations to remove deep-rooted prejudices; but I may hope that reflective and judicious men, who are not themselves practical, and are anxious for information, will weigh the arguments here brought forward before they suffer themselves to be carried away with the stream, and yield their better judgment to theorists and philanthropists in opposition to practical experience."

It will be seen that the Doctor is a most decided opponent of the system of management now pursued by Dr. Conolly at Hanwell.

PRACTICAL DIRECTIONS FOR THE PREPARATION OF AERATED WATERS, AND THE VARIOUS COMPOUNDS OF CARBONIC ACID GAS, &c. By *Robert Venables*, M.B.

Dr. Venables considers, that the chemical agencies of carbonic acid may be rendered extensively subservient to therapeutical pharmacy, from its capabilities of rendering some of our most powerful and active remedies soluble, and thus placing them in the circumstances most calculated to increase their energies, and insure their therapeutical agencies to the fullest extent and in the highest degree. Though some of the neutral compounds of carbonic acid, such as the carbonated alkaline earths, are wholly insoluble in water, yet water impregnated with carbonic acid will now prove a solvent. It is, however, principally to the preparation of proto-carbonate of iron, as a therapeutical agent, that our author's attention was directed.

"Carbonate of iron, though insoluble in water, yet was found singularly efficacious as a remedial agent. It is, however, a principle in pharmacology, that in general the power of remedies is not only exerted more quickly, but rendered much more active by solution. Therefore, to effect the solubility of the carbonate of iron forms an object of special moment. The salt, though insoluble in mere water, readily dissolves in water strongly impregnated with carbonic acid gas. This property consequently enables us to give steel under the much more grateful form of an *effervescing chalybeate*. This is effected by mixing together the equivalent proportions of sulphate of iron and carbonate of potass, or of soda, for decomposition and the generation of carbonate of iron. If carbonated water be drawn upon this mixture, decomposition will ensue, and the generated carbonate of iron be held in solution by the excess of carbonic acid. In this state it is fit for use.

"In the above process it is evident that with carbonate of iron we will have also sulphate of potass or of soda, as the case may be, owing to the mutual transfer of acids and bases. Notwithstanding that the quantity of alkaline salts, generally speaking, will be small, yet even so their presence is often a great inconvenience—sometimes even wholly inadmissible; yet under these circumstances they cannot be separated. It becomes therefore a question of some importance whether we can easily prepare an effervescing chalybeate, free from all other saline contamination. *By the aid of the carbonating apparatus, this is practicable, and both easily and quickly.*

"Carbonic acid condensed in water speedily attacks iron, forms it into car-

bonate and dissolves it. If then a small coil of iron wire, harpsichord wire for instance, be introduced into the pressure flask before its connexion with the apparatus; and the flask be now filled with distilled water, impregnated with carbonic acid under strong pressure, and allowed to remain so for some little time, a perfectly pure effervescing chalybeate draught will be obtained. Or if some iron filings or wire be placed in the water in the condenser, as the water becomes impregnated with the acid, the iron will be converted into carbonate, and held in solution, which will be ready for use the moment it is drawn off from the apparatus."

Dr. Venables states that he can, "from experience, assert that there is no preparation of iron so mild, so active, and so decidedly suitable as a chalybeate, or congenial to the animal economy, as the proto-carbonate of iron, held in solution by an excess of carbonic acid gas. If the digestion be impaired, provided there be no inflammatory action, the above preparation will be found to exert considerable influence. Should the blood be impoverished, and deficient in the red particles, this preparation will restore it to its healthy condition more effectually than any other. If we observe its action upon the pale and anæmious leucophlegmatic habit, we are often astonished at the rapid improvement, and the return of health and spirits."

The apparatus employed by Dr. Venables is Bakewell's patent portable aërating apparatus, a description of which is given, with instructions as regards its use for the preparation of aërated waters, lemonade, and the factitious compounds, &c. of carbonic acid. A long list is added, of diseases in which carbonic acid and its compounds may be administered with advantage; beginning with idiopathic fevers, and ending with incontinence of urine.

PRACTICAL REMARKS ON GOUT, RHEUMATIC FEVER, AND CHRONIC RHEUMATISM OF THE JOINTS. By *Robert Bently Todd*, M.D.

This work contains the substance of the Croonian Lectures delivered by the author during the present year.

The object which the author has had in view, he says, is to place in juxtaposition the leading facts in the Natural History of Gout and Rheumatism, in order to direct the attention of practitioners, in a more especial manner than has hitherto been done, to what he conceives to be their true pathology.

The work does not profess to give a complete history of these diseases; on the contrary, many details of symptoms, ætiology, and treatment, have been purposely omitted, as irrelevant to the argument, the design of which is, by contrasting the phenomena of gout and rheumatism with those of diseases confessedly caused by a morbid state of the fluids, to claim for them a similar origin.

We will proceed to notice a few points.

On the Gouty Paroxysm, developing itself in depressed States of the System.—Dr. Todd relates several cases tending to prove that, under certain circumstances, a feeble, or even exhausted condition of body, the very opposite indeed to that so often seen in acute gout, will favour the development and the recurrence of the paroxysm of this malady. It is not impossible that the prejudice against colchicum as tending to shorten the intervals between the paroxysms of gout, may be owing to the injudicious use of it in too large doses, which by their depressing effects may have favoured the more frequent recurrence of the fits.

One of the cases related is this; a gentleman of robust constitution, about thirty years of age, accustomed to active exercise, and who had lived pretty freely, had an attack of gout in the great toe; this yielded readily to treatment, and he

took colchicum for a time. On his recovery he was directed to pursue a plan of diet, taking animal food in moderation, abstaining from malt liquor, and using wine in very small quantities. In the course of three or four months the gentleman had as many attacks of gout in the same toe. He had carried the plan of regimen too far; he had become a teetotaller, and frequently avoided taking meat; the consequence was, that he had become thin, pale, and enfeebled, and his muscles soft and flabby. He was recommended a good diet and tonic remedies; the gout left him, and he has not had an attack for two years.

Dr. Todd remarks, that he has noticed a peculiarity belonging to most of the cases of this kind that he has met with, namely, that the urine does not exhibit the abundant precipitate of the lithates which so often accompanies the gouty paroxysm. In some instances there was no precipitate at all; and in others it was very slight. The specific gravity of the urine was rather below than above the ordinary standard, indicating that no excessive quantity of either urea or lithic acid was held in solution.

"We learn, from such cases, two useful cautions. The first is, that in the treatment of the gouty paroxysm, we should be careful not to reduce the patient too low, lest a new paroxysm be induced. And secondly, that in the treatment of patients of the gouty diathesis for other diseases, we should be careful to avoid carrying the antiphlogistic regimen too far, for fear of exciting a fit of the gout."

Heart-disease occurring in the Rheumatic Diathesis.—Under the influence of cold, imperfect nutrition, or defective assimilation, the constitution is liable to be so modified, as to take on what may be called the *rheumatic diathesis*. This state Dr. Todd has observed to occur chiefly in children and persons under the age of thirty: seldom beyond that period, except where the diathesis existed in early life.

"It is characterized by the existence of a febrile state of the system, variously developed in different individuals, and indicated by quickness of circulation, occasional exacerbations evinced by heat of skin and perspirations more or less profuse; the perspirations having a sour odour. The urine is prone to the development of lithic deposits, more or less coloured. These symptoms, however, often escape the patient's observation (although readily detected by the attentive practitioner,) and his chief complaint is of pains in the joints, not always occasioning swellings or enlargements, but often impeding motion; pains also in the muscles, or in the course of the nerves of the limbs; not stationary, but now affecting one limb or joint, and again another. The real nature of these pains is, I believe, often overlooked; and when they occur in children they are frequently regarded by nurses and others as due to the rapid growth of the child, and are popularly called 'growing pains.'"

This diathesis is also distinguished by marks of deranged nutrition. There is a cachectic appearance; the patient is thin, languid, keenly sensitive to vicissitudes of temperature.

In this state of constitution, the heart is apt to become affected; and the disturbance consequent upon this lesion may often be the first circumstance to excite the attention of the patient or his friends. The pericardium occasionally, but more frequently the endocardium and valves of the heart, are the parts affected. Dr. Todd has so frequently met with instances of diseased heart in young persons labouring under the rheumatic diathesis, but who have never had any actual paroxysm of rheumatic fever, that he cannot but regard this state of constitution as a fertile source of those cardiac diseases which are seen in early life. Hence he considers it most important for the practitioner to be on the watch for the signs of this state of constitution, as, by removing it, many young persons might be saved from the consequences of diseased heart.

May the unhealthy Secretions of the Uterus afford Material for the Production

of Rheumatic Matter?—When the blood is infected by certain foreign matters, symptoms are induced resembling those of a gouty or rheumatic kind. These morbid matters, we have good reason to believe, are primarily derived from a defect in that part of the digestive process which is performed in the stomach and duodenum. Several cases, however, have occurred to Dr. Tood which have impressed him strongly with the idea that the secretions of the uterus, if of an unhealthy character, and not duly thrown off, may be absorbed into the circulation, and contaminate the blood, producing symptoms of greater or less urgency, according to the nature and quantity of the morbid secretion which may have been absorbed. A case is related, in which there seems to have been an obvious connexion between the state of the womb and the rheumatic paroxysm, on the outbreak of which the uterine symptoms were relieved. The fever was of a low kind, and had the appearance of one produced by the poisoned state of the blood. The digestive organs had shown no sign of material derangement before the occurrence of the paroxysm; the part which seemed chiefly to suffer was the uterus.

The following is the proposition stated by Dr. Todd on this point. "In cases where the uterine secretions are imperfect, in quantity and quality, and are not duly thrown off from the organ, but are liable to become accumulated in it,—a condition which may sometimes occur in early life, (*the rheumatic age*,) or which may be deferred until the period when the menses are about to cease (*the gouty age*)—a diathesis may be met with among women strongly resembling the rheumatic or the gouty, and deriving its chief origin, although probably not its only one, from the abnormal secretion of the uterus."

The practical conclusion to be deduced from these remarks, would lead us to lay great stress on the adoption of all means calculated to prevent the retention of unhealthy secretions in the uterus, and to promote the healthy action of that organ; and the more so if the patient already show any indication of the rheumatic or gouty diathesis.

With regard to the treatment to be adopted in cases of gout and rheumatism, the author expresses very strong objections to the lowering system in gout; the following are his directions as regards the administration of colchicum.

"1. Colchicum should not be given in the asthenic form of gout.

"2. Colchicum should never be given at the onset of a paroxysm, nor until the bowels have been duly acted upon by mild purgatives.

"3. The first doses of the medicine should be very small; they may be gradually increased.

"4. Colchicum should be always administered at first uncombined with any other medicine, until the practitioner has satisfied himself that it is not likely to disagree with his patient. And indeed there is always a disadvantage in administering this medicine in combination with others; since it may become difficult, if not impossible, at times, to determine what effects should be ascribed to the colchicum, and what to the other ingredients.

"5. It should not be administered so as to excite nausea, vomiting, or purging. These effects should be regarded as indicative of the unfavourable operation of the medicine.

"6. Colchicum may be regarded as acting favourably, when, under its use, the urine is increased in quantity, a more abundant bile is discharged; when the fæces, though solid, are surrounded by mucus, and the skin secretes freely.

"7. The effects of colchicum should be carefully watched, as, like digitalis and other medicines, it is apt to accumulate in the system.

"The use of this medicine seems chiefly applicable to the sthenic form of gout, which occurs in robust constitutions, and in the prime of life; but it is almost inadmissible in persons advanced in years, who have had several attacks, and in whom the malady would seem too deeply rooted, to be influenced by the temporary administration of this remedy."

In rheumatic fever, also, Dr. Todd has considered it his duty to protest against the too prevalent practice of large bleedings; other evacuants, he says, being as capable of modifying the fever, without the risk of doing ulterior mischief, and opium being more effective in relieving pain. The mistura guaiaci, as employed by Dr. Seymour, is a most useful medicine in this affection.

A work of considerable merit.

AUSTRIA: ITS LITERARY, SCIENTIFIC, AND MEDICAL INSTITUTIONS, &c. By W. R. WILDE, M.R.I.A.

The object of this work is stated by Mr. Wilde to be twofold: first, to afford information to the medical and general scientific reader in this country, on topics of considerable importance not hitherto inquired into, with respect to the state of medicine, the arrangement of hospitals and sanatory institutions, and the admirable system of education and *clinique* in a large portion of Europe. Secondly, this work may be found useful as a hand-book, in its particular province, to a country with which we are daily becoming more and more acquainted and connected.

We will notice a few points of interest as they arise.

Division of the Medical Profession in Austria.—At present, the medical profession in Austria is divided into the first class physicians and first class surgeons; the town and country surgeons, analagous to the general practitioners in Great Britain; those who practise specialities, as accoucheurs, oculists, dentists; the *pharmaceurs*, who are divided into the apothecaries and the doctors of chemistry; and, lastly, the veterinary surgeons—a class very superior to any other of a similar calling in Europe, and a large portion of whom are at the same time physicians and surgeons of the first grade. Each of these classes undergoes a certain fixed course of study. The education for the first class, physicians and surgeons, requires five years, and none are permitted to attend the lectures upon these subjects but those who have obtained, at the final examinations of their philosophical studies, a certificate of first-class in all the obligatory courses. They only are eligible to become doctors of medicine and surgery.

The second class surgeons, however, are in a far inferior position, being degraded, not only in letter but in spirit, to the mere barbers and dressers of wounds—a position from which they can never rise, no matter what their talents or abilities. Every *Wundartz* (one of this class) is obliged by the law of the land to shave for a couple of *kreutzers*, exhibit the basin and striped pole, and keep open a barber's shop. And although many of these surgeons in the larger cities do not themselves manipulate upon the jaws and chins of the inhabitants, yet are they obliged to keep a servant or an apprentice to do so, as hair-dressers or any other class of the community, except the *Wundärzte*, are not permitted to perform this operation. These general practitioners are not allowed to sell medicine, but to them is committed the performance of all the minor chirurgical parts of the profession, such as usually falls to the lot of the apothecary with us; as for instance, bleeding, cupping, the application of leeches, and the dressing of simple wounds and fractures, &c. They cannot prescribe medicine, except a few simples, unless in cases of immediate danger, and when a physician or doctor of surgery is not at hand; they form, however, the principal practitioners in the distant country parts.

Great General Hospital at Vienna.—This most magnificent institution, the greatest either here or upon the Continent, contains within its walls 3,477 persons, and treats upwards of 30,500 patients annually. The object of this establishment is three-fold. First, to afford a comfortable asylum for those able to pay all, or a portion of their expenses; secondly, to provide in-door medical

relief gratis for those unable to pay any portion of their cost; and, thirdly, to maintain a school of practical clinical medicine. The hospital is divided into three great departments—the medical and surgical hospital, the lying-in institution, and the lunatic asylum. There are 389 medical attendants to 3,025 beds, or one for every eight, independent of the different clerks and general servants not in immediate attendance upon the sick.

This hospital, however, with the exception of the lying-in department for females illegitimately with child, and its attendant institution for the foundlings born there, together with the female venereal wards, affords little or no *gratuitous relief*. The expences are defrayed by the patient himself, or his friends, or in default of these, by the parish or district to which he belongs. In the event of a foreigner being obliged to seek medical relief in this or any other Austrian hospital, his ambassador is served with the bill of his expenses, which his country is obliged to discharge.

State of Disease in Vienna.—"Scrofulous diseases, particularly in the tubercular form, are more frequent in Austria than any other country I have visited. General surgery has but little to offer to the attention of the French or English student, except, perhaps, a lesson upon adhesive inflammation to the former. The want of machinery and manufactures, as well as the few heavy-wheeled carriages, and the sober quiet deportment of the inhabitants, compared with London, Paris, or Dublin, no doubt assists in lessening the number of accidents.

"Calculus and bladder affections are also comparatively less frequent than with us. I cannot praise the dressing and bandaging—it is neither neat nor scientific. The surgical divisions most deserving a visit, are those of Drs. Schuh and Moisisowitz, the most rising surgeons in Vienna. Rheumatism is a most frequent and dangerous affection in Vienna. Diseases of the skin are not very common in this part of Austria; there is a separate division set apart for their treatment, which is chiefly by baths and fumigations; but to those who have seen St. Louis, at Paris, it offers little attraction.

"The fever wards are usually crowded, especially in the cold season, and their mortality is very great; generally a third die; ulceration of the intestines, and scrofulous tubercular deposits in the abdomen, being the most usual pathological appearances. The visitor will have here a good opportunity of witnessing, on a large scale, the *Nerven fieber*, or true *typhus abdominalis* of the east of Europe. The treatment is more of the expectant than the anticipating plan, and consists, as indeed does the treatment of most diseases in this hospital, of some one line already marked out, and only deviating to meet symptoms as they present themselves, but never venturing upon new and unexplored ground. Stimulants are never used, even in the advanced stage of this disease."

Dr. Skoda's Clinique.—This is purely a stethoscopic clinique for diseases of the chest, and is perhaps the best school for acquiring a knowledge of the diagnosis of such affections that the foreigner can visit. As an auscultator, Dr. Skoda possesses an unrivalled reputation, and certainly his diagnosis of heart and lung affections is astonishingly correct. It is entirely in this latter branch of knowledge that this clinique is so remarkable; for the treatment pursued there has in it nothing peculiar except that it is by no means good. It is purely antiphlogistic—consisting of blood-letting, leeching, and blistering, with the use of a few simples—such as tartarised antimony and the tinctura digitalis—administered in large doses. In pleuritic effusion he practises paracentesis much more frequently than any other physician, and does so even in acute cases; for he maintains that it must be performed early if at all, otherwise the lung having become collapsed and shrivelled up by the long-continued pressure of the fluid, will not again expand. He has also punctured the pericardium several times and with various success. In acute rheumatism he employs the constant application of iced water to the inflamed extremities, even where there is severe pericarditis present.

Syphilis.—The venereal affections in Austria appear generally to be of a milder nature than in Great Britain. This is probably owing to the sanatory police regulations, to the peculiarity of the climate, the temperate habits of the people, the non-use of mercury, and the non-existence of unqualified practitioners to attempt its treatment. True chancre is very rarely seen, and phagedenic and sloughing ulcers of the genitals are comparatively unknown. Among the secondary forms of syphilis, affections of the throat, and papular eruptions are the most common, but syphilitic rheumatism and nocturnal pains are rare and less severe than in this country. Rupia, nodes, caries, the pustular form of eruption, the spreading syphilitic sore, diseases of the bones and testes, &c., and other severe secondary and tertiary forms are very seldom seen: indeed rupia appeared to be only known from English descriptions of it, and during six months Mr. Wilde did not see a single case of syphilitic iritus. Condylomata are very prevalent; these are supposed by the medical men there to constitute a primary affection, and to form in many instances the only symptom.

Inoculation with syphilitic virus, as practised by Ricord at Paris, is not permitted in Vienna. Infantile syphilis is exceedingly rare, and abortions from that disease are hardly known.

Imperial Lying-in Hospital.—This is probably the most curious institution in Europe. Pregnant women of every description can avail themselves of the advantages of this asylum; the poor and destitute are admitted gratis, and the rich by paying a certain stated sum. Every comfort is supplied—no visitor can intrude—*no law affect, and no authority reach its inmates—nay more, the very fact of their having been delivered there is inadmissible either as documentary or personal evidence in a court of justice.* The principle of secresy is imposed as one of the strictest duties on all those in any way engaged in the institution. Should a female desert her family, and take refuge here, the vigilance of the police or the inquiries of her friends may trace her to the door of the *Gebäranstalt*, but no further. Indeed in many instances, and in almost all the cases occurring among the highest class, a female may enter, accomplish her delivery, and depart from the hospital without her name being known, or even her face seen by the physician or any of the attendants. Persons are allowed to appear masked, veiled, or otherwise disguised; they may enter at any time previous to their delivery, and remain as long as they wish; they may carry their infants away with them or send them to the foundling hospital through the medical attendant. The names and address of persons admitted into this division are not required, but each female must write her name and residence upon a billet, which she seals, and on the back of which the physician inscribes the number of the room and bed she occupies. This ticket is then placed in a small locked-up cabinet beside her bed, and at her departure it is returned to her unopened; its object being, that in case of her death, the institution may inform her friends, or be able to produce this testimony of her decease on the demand of her relations or the police.

A considerable portion of the work is devoted to the consideration of the state of ophthalmic surgery in Vienna, but as this has been already noticed in this Journal,* we shall not again refer to it.

The volume is one of very considerable interest.

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* No. 71, page 262.

Spirit of the Foreign Periodicals.

PATHOLOGY OF PHLEGMASIA DOLENS—DISCUSSION AT THE ROYAL ACADEMY—REMARKS.

AT a recent *seance* of this learned body, M. *Capuron* read an elaborate report on a memoir by M. *Drousard* on the disease known by the name of Phlegmasia Alba Dolens, and in which the author has attempted to prove that it is generally, if not always, connected with an inflammation of the crural and other veins of the affected limb. The question, it will be seen, gave rise to much discussion and difference of opinion; some assenting to this view of the subject, and others expressing their decided dissent. The result of the whole seems to be, that there are different forms of the disease, and that these are most probably owing to the operation of different causes.

M. *Breschet* objected to the opinion, expressed in the report just read, that *phlegmasia alba dolens* is in all cases the result of an inflammation of the veins in the affected parts. According to his experience, the lymphatic vessels are usually as much implicated in the morbid process as the veins. The phenomena of genuine phlegmasia are certainly not the same as those of ordinary phlebitis; and this, among other reasons, he considered a strong argument against the opinion of M. *Capuron*.

M. *Capuron*, in reply, said that he had by no means denied that the lymphatic vessels may be inflamed in this disease; but only that they are not primarily and necessarily so.

M. *Blandin*:—"It has been long imagined that Phlegmasia alba is a disease peculiar to women. This is not strictly correct; for, although of much more frequent occurrence in females, it is certainly not peculiar to them. When the disease was first recognised and described, it seems to have been regarded as a mere form of œdema; but, in proportion as its phenomena and cause were more attentively studied, it was found that in some cases the veins, in others the lymphatic vessels, and in others still the nerves were in a more or less decided state of inflammation at the time:—this M. *Dance* shewed in his interesting memoir on the subject. Subsequently however it has been discovered that the inflammation of the veins and that of the nerves are not of a necessary, but only of an occasional, coincidence in phlegmasia; and that the only essential pathological character of the disease is an inflammation of the absorbent vessels of the limb. We must admit, however, that the inflammation of the veins sometimes precedes that of the absorbents, and we are therefore obliged to dissent from the opinion of our colleague, M. *Breschet*, who seems to regard the last-named vessel as invariably the seat of the disease in question."

M. *Velpeau*.—"Twenty years ago, when I published my first observations on this disease, it was almost universally maintained that the pathological cause was an inflammation of the lymphatic vessels of the limb. In consequence of several post-mortem examinations, I felt convinced that the veins were often more or less affected, and I expressed this opinion publicly. About the same time, Dr. *Davis* came to nearly the same conclusions in England. I have had very many opportunities, since that time, of studying the diseases of the venous and lymphatic systems, and have treated not a few cases of phlegmasia alba, and I now feel assured of the truth of the following two propositions: *first*, that the opinion of M. *Dance* and others, as to the nerves being in some cases inflamed, is utterly erroneous; and *secondly*, that the disease is primarily seated in the lymphatic vessels of the thigh; that a phlebitis is not necessarily existent;

and when it is, that it is only of consecutive or secondary development. But while I say this I must also distinctly state that, in almost all *post-mortem* examinations of the affected parts, both sets of vessels have been found more or less seriously diseased. The phenomena of the disease in its first stage tend much to shew that it is rather an *angeioleucitis* then a *phlebitis* that we have to deal with. There is then a general engorgement of the limb, with patches here and there of diffused redness, and irregular uneven nuclei or nodules of tumefaction, which are not necessarily found along the *trajet* of the veins, as in genuine phlebitis. The constitutional symptoms too, in proper phlegmasia dolens, are certainly not the same as in phlebitis; and it is only when both sets of vessels happen to be simultaneously implicated that we ever meet with the symptoms which denote the occurrence of purulent resorption and infection. In conclusion, I will briefly repeat my opinion that genuine Phlegmasia alba dolens is attributable to an angeioleucitis or inflammation of the lymphatic vessels, accompanied with an inflammation of the adjacent cellular tissue, and occasionally also with inflammation of one or more of the veins of the limb."

M. *Capuron* here reminded the Academy that the opinion now expressed by the preceding speaker differs in almost every essential particular from that which he expressed not long ago, and pointed out the striking contradiction between M. Velpeau's present sentiments and those which he has published in his writings.

M. *Cloquet*:—"I agree with M. *Blandin* in the sentiment which he has expressed in his remarks, that phlegmasia alba is not necessarily or invariably met with in the female sex; as cases of it have unquestionably occurred, in my own practice, among youths and men. I have experienced no little difficulty in forming any exact or definite opinion as to the etiology of this disease. If I were to trust exclusively to the results of the post-mortem examinations which I have made, I should indeed be utterly perplexed what to say; but, by having carefully watched the progress of many cases from their first stage, I have been enabled to form clearer and more accurate notions, as I think, on the subject under consideration. The result of my observations is that, as a general remark, the cellular tissue is primarily the seat of the œdematous swelling; that an inflammatory engorgement, accompanied with effusion, takes place at first; and that it is only consecutively that either the lymphatic vessels or the veins become affected. In my opinion we may regard Phlegmasia alba as a specific exhalant inflammation of the cellular tissue, with or without an accompanying inflammation of the veins or lymphatic vessels of the part."

M. *Moreau* (the eminent obstetrical physician) took nearly the same view of the ætiology of phlegmasia alba as M. *Cloquet*. In his opinion, it is a specific disease which should not be confounded with an inflammation either of the absorbents or of the veins. "Phlebitis is always a serious, and often a most dangerous, disease; phlegmasia alba, when uncomplicated with other lesion, is comparatively mild and innocuous. In proof that there is something special about the disease, we have only to bear in mind the circumstances which usually give rise to it. Is it not remarkable that often it does not occur for 15, 18, or 20 days after delivery, when the usual exciting causes of suppuration have entirely passed away? Does not this circumstance alone suffice to shew that the disease depends most frequently on the neglect of certain precautions on the part of women who have been recently delivered? According to my own experience, it is generally owing to checked perspiration under such circumstances. At first there seems to be nothing but an indolent swelling, a simple engorgement; this, if not relieved, is apt to be followed by inflammation of the absorbents, and in some cases of the veins also. It is only when the last-named lesion is present, that there is any cause for alarm as to the issue of the case. I should define the disease in its primary stage to be 'une veritable inflammation exhalante du tissu cellulaire.'"

M. *Berard*: "I have listened with a great deal of pleasure to the remarks which have just been made by MM. *Cloquet* and *Moreau*; for I must frankly confess that I have never very clearly understood what part the alleged inflammation of the absorbents and veins has been supposed to act in the history of phlegmasia dolens. When the superficial absorbents of an extremity are really inflamed, the phenomena are usually sufficiently obvious to prevent any mistake in the diagnosis; and certainly these phenomena are not those generally exhibited by the disease in question.

With crural phlebitis, it might be more easy to reconcile the symptoms; for M. *Bouillaud* has shown that an adhesive inflammation of a vein is apt to be followed by œdematous swelling of the part and its neighbourhood, in consequence of the obstruction to the free return of the blood. But, notwithstanding this plausible explanation, I must confess that I am much more inclined to adopt the pathological views of MM. *Cloquet* and *Moreau*. There is a fact which, although not bearing directly on the subject under consideration, may not be undeserving of notice here: I allude to the tendency which exists in puerperal women to the formation of diffused abscesses."

M. *Andral*: "The expression, Phlegmasia alba dolens, is a very unfortunate one, and has tended not a little to keep up the obscurity that hangs over the subject: it is a complex term that embraces a variety of morbid alterations dissimilar from each other, and thus tends to perpetuate confusion. I agree with those gentlemen who have asserted that the disease is not confined, (as alleged by M. *Rochoux*,) to the female sex. I have seen unquestionable cases of it among men; but in them, as well as in women, always associated with a lesion of some of the pelvic viscera. I feel satisfied of the truth of this position, that, wherever there is a phlegmasia dolens, we may at once suspect that there is something wrong within the pelvis. The 'point de depart' of the disease is an obstruction of the chief vein of the limb; this is the cause of the œdema.

"In every case which I have examined by dissection, I have found almost uniformly a correspondence between the lesion of the veins and some inflammatory process within the pelvis—the diagnosis of which, it must be confessed, is often exceedingly difficult during life.

"But I do not mean to assert that this complex disease is always, although certainly generally, dependent upon a mere obliterative phlebitis. Besides the lesion of the veins, there may be a lesion of the absorbent vessels, and also of the cellular tissue. In women the disease is generally a result of delivery; in men, either of some morbid affection within the pelvis, or of an injury of the lower parts of the limb."

M. *Gerardin* expressed his surprise that none of the preceding speakers had alluded to the connexion that certainly exists between the occurrence of the disease, at least in puerperal women, and the state of the mammary secretion. It is acknowledged by all writers, that it is more frequent in those who do not suckle their children than in those who do; and the sudden suppression of the milk has often been known to be quickly followed by an attack of phlegmasia dolens, as well as by sudden effusions into the cavity of the chest, abdomen, or of some of the joints.

Now the diseased action, in both sets of cases, is nearly the same; in the one, the effusion takes place into a cavity, while in the other, it is into the subcutaneous cellular tissue. It is sometimes surprising to see with what rapidity such effusions are induced; their gradual increase may be watched from one hour to another. It is usually asserted that phlegmasia alba is of much more frequent occurrence in the lower than in the upper extremities. Now the very reverse seems to me to be the case. (We do not remember having ever met with any statement to this effect before.) It has also been said that the disease is seldom attended with any danger; but such an opinion must be received with due caution, as a sudden effusion may take place into one of the internal cavities, or into the sheaths of the

blood-vessels, and prove fatal either rapidly, or by a slow wasting process.—*Gazette Medicale.*

Remarks.—The attentive reader cannot fail to have remarked the great and more than usual discrepancy of opinion among a set of eminent men, the members of one of the first medical societies of the age, as to the nature of a disease, which is not of very unfrequent occurrence. We are told by one learned academician that the veins are the parts most affected; by another, that the lymphatic vessels are usually the seat of the morbid action; by a third, that both sets of vessels, and the nerves of the limb also, are always more or less inflamed; and by a fourth, that the disease is quite independent of all these parts, and is truly and essentially one of the cellular tissue. May we not *à priori*, suspect from this very discordance of opinion, that the truth really lies, not in one nor in another of these doctrines, but in the *ensemble* of all put together; and that the disease in question does not uniformly or invariably commence in one part alone? Perhaps it might be said with more accuracy that, under the name of phlegmasia dolens, different diseases, more or less dissimilar from each other, are grouped together as if they were all cognate affections.

For our own part, we are certainly inclined to think so, and we cannot but express our surprise that so accurate and cautious a pathologist, as M. *Andral* is, should regard an œdematous swelling of the thigh, supervening upon an injury of the foot or leg, as analogous with genuine phlegmasia dolens.

In studying this, as well as every other puerperal affection, we should never lose sight of the peculiar state of the constitution in which the morbid action is apt to occur; viz. within from one to three weeks after delivery.

The loss of blood, the exhaustion of nervous energy, the excitable state of mind, the secretion of the milk and the systemic disturbance that so often accompanies it, the distension of the cellular tissue, &c. are so many circumstances which must render the puerperal state different from ever other, even among females themselves, and which stamp with a peculiar character the diseases that are then apt to occur. No experienced physician will ever lose sight of this most important consideration; and if it had been less neglected than it has been too often during the present century, we should have less cause to lament the not very creditable controversies on puerperal fever, and the melancholy loss of life that has (on some occasions at least) been the consequence.

We have little doubt, in our own minds, that in a large majority, if not in all cases, of genuine phlegmasia dolens, there is some affection of the uterus, cotemporaneous with the outward and visible one of the thigh. We generally find that there is a greater or less degree of tenderness in the corresponding iliac region or even the pubes at the commencement of the attack, and the lochial secretion is always more or less disturbed. That this uterine affection is of an inflammatory nature is more than probable; but then, be it remembered, the character of the inflammation has something unusual and special; it has, if we may so speak, a peculiar idiosyncrasy; and it is this very peculiar idiosyncrasy that makes all the difference—and a most important one it is—between such an œdema of the limb as may supervene upon an injury of the foot, and the proper phlegmasia dolens of puerperal women.

Now, although we confidently deny that phlegmasia alba is either a phlebitis, or an angeoleucitis, or a neuritis, or all three together, we are ready to admit that each or all of these affections may exist simultaneously with it. Such complicated cases are, as a matter of course, more unfavourable than the others, and they will necessarily require certain modifications in the line of treatment to be pursued.

It is certainly much easier to say what the disease is not, than what it really is; and we must frankly admit that its pathology is (in spite of the researches of numerous observers) still very far from being satisfactorily made out.

With respect to treatment, the only safe plan is minutely to examine all the phenomena of each case by itself, and, independently of any preconceived hypothesis as to its nature, to watch its progress from day to day, and to adapt our remedies to the symptoms as they develope themselves, always paying the greatest attention to the state of the uterus, and keeping in mind the peculiarities of the female system in the puerperal state.—(*Rev.*)

REMARKS ON THE MALIGNANT PUSTULE.

In our last Number we drew our readers' attention to this disease, by several extracts from a Paper on the subject recently published by Dr. *Müller*, and we now avail ourselves of an elaborate memoir by Dr. *Bourgeois*—whose experience must be great, as he has seen upwards of a hundred cases—to give some further illustrations of its history. Dr. B. very properly remarks that the term *pustule* applied to this disease is quite at variance with the phenomena actually observed. It is not a pustule, but a distinct and well-formed vesicle, that forms over the spot where the virus has been inserted; and the contents of this vesicle never assume a genuine or perfect purulent character. The disease is essentially *local* at first; and it is only when the virus has been absorbed into the system, or when the local excitement becomes severe and extensive, that unpleasant constitutional symptoms make their appearance. The result of Dr. *Bourgeois's* experience (and of that indeed of most other medical men) is, that the disease very generally proves fatal if left to its own course; and that recovery is rare, unless when art timely interferes, either to arrest the mischief while it is yet local, or to support and aid the constitution, when it has become *poisoned* with the septic virus. The post-mortem appearances found on dissection do not throw much light on the nature of the disease. This remark, be it remembered, usually holds true of all diseases arising from the operation of a poison, received into the system. The blood has been observed in several cases to be in an unusually fluid condition; and the tendency to speedy putrefaction is often remarkably great—just as it is in many putrid fevers.

Dr. B. gives a very graphic description of the appearances usually presented during life by the face, when the disease makes its appearance there—and unfortunately this is its seat of predilection above every other part of the body. The swelling is often so great that scarcely a single feature can be recognised; the whole head and face looking like a huge distended bladder, with a few depressions or cross lines indicating the situation of the mouth and eyes. Under such circumstances, even when the patient recovers, the deformity left is not unfrequently most distressing. If the lower eyelid be attacked, it often becomes everted; and then we have a red fleshly-looking ring formed round the eye, in consequence of the permanent exposure of the conjunctiva and inside of the tarsus. The upper lid never suffers so much as the lower one. With respect to the nose, the deformity left behind is sometimes still more distressing: for occasionally the whole, or the greater part of its lobe is utterly destroyed, so that the openings of the nostrils are then like two wide holes in the middle of the face. The lips also may be disfigured at the same time by the formation of scars and the destruction of more or less of their substance. As to the other parts of the face, the cicatrices, though generally less hideous, often give rise to great distortion of the countenance. One source of danger, when the disease is seated in the face, is that the pharynx may become affected; for then the œdematous swelling of the velum and pillars of the throat is sometimes so great as to cause asphyxia.

With respect to the nature and causes of malignant pustule, Dr. *Bourgeois* remarks: "the disease is essentially of a gangrenous and septic character; and

is the result of direct absorption of an animal poison into the system. This poison seems to be generated in the bodies of most of our domestic animals—at least in those which are herbivorous, as in the sheep, ox, horse and ass—and is capable of being transmitted by direct contact to mankind. The primary and exciting causes of this epizootic disease among cattle have never been very accurately ascertained. Some writers have attributed it to the nature of the pasturage, and others to an unknown malarious state of the atmosphere."

"Whatever view," adds our author, "we take of the question, experience clearly proves that the disease makes its appearance, in our district at least, almost exclusively during the prevalence of great heats, when the herbage is very dry, and when the cattle are not sufficiently sheltered from the sun's rays. Under such circumstances, we often lose immense numbers of our cattle in this part of the country."

It would seem that an animal may communicate the disease to a human being, although it may be scarcely, if at all, visibly affected itself. It is also by no means uncommon for the poison to be conveyed by insects from the diseased brutes to men. I have had many cases, says our author, of malignant pustule among people who were residing in the neighbourhood of shambles and skin-stores, although they had nothing immediate to do with them.

It deserves to be noticed that some parts of an animal, as the hair or wool for example, retain the poisonous matter for a great length of time, and even after they may have been exposed to washing and other cleansing processes. Dr. B. alludes to a case which he once saw in a man, who seemed to have caught the disease by handling the horse-hair taken out of an old sofa.

It has been supposed by some that the mere eating of the flesh of infected animals may communicate the disease; but this is not in accordance with the observations of Dr. *Bourgeois*.

No satisfactory explanation has yet been given why the disease should be so common in some districts, and so rare in others where the climate and soil are much alike. It has been asked, is the disease communicable from one human being to another? or from a human being to one of the lower animals? Dr. B. admits the probability of the first case; but knows of nothing as yet to warrant his assent to the second of these queries. We come now to the most important part of our subject, the *Treatment*.

There is no disease in which it is more necessary to have recourse promptly and without delay to the use of proper remedies. We need not allude to the importance, as a preservative and counteracting means, of extreme cleanliness and frequent washing (occasionally with the solution of the chloruret of lime) on the part of those persons who have any thing to do with infected cattle. Many men expose themselves to much unnecessary risk by putting the knife, with which they have been flaying the carcasses, between their teeth, and by carrying the hides on their bare shoulders. As the disease is strictly and essentially local at first, it is obvious that, if the morbific germ in a part be destroyed before the system becomes infected, the danger is over. The primary object therefore is to destroy the inoculated poison; and this is most effectually done by the judicious application of certain caustics. Dr. B. very properly gives the preference to the potassa fusa. The absence indeed of any pustule in those cases where the eyelids are the parts primarily affected, renders the local treatment under such circumstances very puzzling. At first, all that we can well do is perhaps to apply some stimulating lotion; as for example a strong decoction of cinchona, to which some camphorated spirit has been added; or the swollen parts may be pencilled with the nitrate of silver. If a pustule makes its appearance, the application of caustic is then necessary; but, as a matter of course, it must be used with more than ordinary caution.

Unfortunately in most cases the system is already affected, before we have the opportunity of seeing the case. As to general remedies, some medical men have,

recommended the use of bleeding and other antiphlogistic means; but Dr. *B.* very properly condemns such practice. The disease is essentially a *septic* contamination of the fluids of the body, and the mere circumstance of there being a hurried circulation and other febrile symptoms is certainly not a sufficient reason to justify such treatment. Even local depletion should be always avoided; for the system will require all the strength that it may happen to have, to enable it to pass through the morbid process; and moreover the bites of leeches are apt sometimes to assume a gangrenous character. Refrigerant and subsequently stimulating and cordial medicines are necessary in most cases; camphor and musk are among the best of this class. The internal administration of the chlorides has sometimes seemed to be of very decided benefit. As a matter of course, much will depend on the strength and healthfulness of the system; and our prognosis therefore must always be very guarded, when the patient has been an irregularly-living or a dissipated character.—*Archives Generales.*

MM. Recamier and Tessier on Gout.

It is M. *Lisfranc*, if we remember aright, who says that the physicians of the Hôtel Dieu in Paris have been long distinguished for the soundness of their practice and the excellence of their therapeutic instructions to the pupils. None deserves this praise better than M. *Recamier*, who has for very many years been recognised by all his brethren as one of the ablest and most successful practitioners in the French Metropolis.

The subject of gout does not often come within the sphere of a hospital physician's prelections; the disease being very generally the penalty of luxurious living. The rarity of the occurrence made us the more anxious to avail ourselves of the present opportunity of making a few extracts (although they are certainly very disconnected) from a clinical lecture recently delivered at the Hôtel-Dieu upon the subject.

"The phenomena of irregular gout are often not a little obscure, and it requires all the tact of experienced sagacity to trace them to their proper source. Here is an example.

"A medical man was affected with Amblyopia (imperfect amaurosis) and an insensibility of the right side of the chest. He had also a fixed pain in the nape of the neck; the suffering was much increased on any movement of the part. Besides these symptoms, he experienced occasionally slight flying pains, accompanied with a sense of formication and debility in the limbs; and these were every now and then more or less swollen. The patient's own idea was that there was an incipient caries of the cervical vertebræ; but the real fact was that all his symptoms were the mere outward phenomena of a gouty diathesis. On questioning him, it was found that he had been long subject to pains in the feet; and, upon examining them, it was observed that there were traces of tophaceous concretions about some of the joints. A mustard foot bath, and a few glasses of Vichy water, sufficed to bring the pains back to their primary seat; and the patient was thereby soon relieved. We should mention that the suppression of the pain, wherever that was seated, was always followed by a most distressing flatulent dyspepsia. . . . . Not a few cases of hemiplegic paralysis, of cerebral congestion, and even of apoplexy, seem to be decidedly connected with a gouty diathesis. . . . . To define what gout is will puzzle the most ingenious. As to calling it a hyposthenic or a hypersthenic disease, or a neurosis, or by any such appellatives, is absurd. At one time it is inflammatory; at another it is atonic; in one case it is regular, in another it is intermittent; and so on. In short, it is so multiform that it is impossible to say what constitutes it, and what does not."

M. *Tessier*, the colleague of M. *Recamier* at the Hôtel-Dieu, appends the following remarks.

"In *gout* we observe various forms, various affections, various morbid products, and various localisations. Under one common name how many diseased conditions, differing from each other in their symptoms and in their seat, are grouped together! In the case of *scrofula*, too, we find in the same manner a multitude of diversified phenomena—swelling of the nose and lips, ophthalmiæ, tuberculous deposits in various parts, caries, &c.—occurring in different patients; and yet all these affections are said to be scrofulous. Then again with regard to *syphilis*, the same remark holds true: its proteiform character is unfortunately too well known to every medical practitioner. As the disease makes progress, we observe the morbid products constantly changing their aspect and general character.

"In the case of anomalous gouty complaints, the important matter is to form a correct diagnosis; for, if this be done at a sufficiently early period of the illness, we may pretty confidently assure our patient that we can give him relief, if he will but obey orders. In all cases, where internal organs are suffering, the physician should endeavour to draw the enemy outwardly: it is always well to make him show his face; for then he can be much more easily dislodged. By attending to this hint, we may often succeed in relieving many serious and most distressing complaints of the head and stomach—forms in which gout often disguises itself—by simply provoking nature to bring on an attack of arthritis. Indeed all the remedies which we are in the habit of employing, such as sinapisms, blisters, alkaline drinks, &c. can only be viewed as means directed against such and such symptoms, not against the real morbid cause or producing element of the disease;—for of that we know nothing."—*Gazette des Hôpitaux*.

Remarks.—We do not quite agree with M. *Tessier* (whose observations, however, on the whole we cordially approve of,) in his opinion that literally we know nothing of the nature and essential character of gout, and that all we can do with respect to treatment is to draw the disease outwardly to the joints, and to relieve symptoms as they arise.

The disease has always appeared to us to be primarily and essentially dependent upon a disturbance of the digestive and assimilative functions; one result of which is to introduce into the system a chyle that is more or less vitiated, either by the commixture of some foreign material with it, or in consequence of an altered condition of its normal ingredients. When was there ever a case of genuine gout without some pre-existent disturbance of the stomach and bowels? we believe never.

Not unfrequently indeed we meet with persons who will not allow that there has ever been anything the matter with their digestion, although, on further examination, the physician quickly discovers that this is far from being regularly good. Under the universal phrase of being "rather bilious," a vast number of cases of genuine dyspepsia are to be included. The food is imperfectly digested; there is then always a greater or less disposition to the generation of acid in the stomach; and this must be somehow eliminated from the system, otherwise certain morbid actions will inevitably be set up—in one individual, a gouty affection; in another, some urinary complaint; and in a third, perhaps a cutaneous disease. Does this acid ever exist in the blood? M. *Tessier* says that the blood indicates no unusual phenomenon, nor any character that can lead us to believe so. Perhaps not; but this circumstance alone is not a sufficient reason for altogether denying the existence of an acid matter in the fluids. Organic chemistry is in its very infancy, and we are still but at the very threshold of our knowledge respecting the changes which the fluids undergo during disease. The whole subject is full of doubts and difficulties. A few years ago we used to be told that the presence of nitrogen was one mark of distinction between vegetables and animals; and now we find that all plants contain more or less of this prin-

ciple. What was the reason of this?—simply because one chemist followed the dicta of another, without examining the subject for himself. And so it has been with the examination of the blood and other fluids of the body in a state of disease. Have we any decisive experiments to prove that there is no appreciable difference between the blood of a person in perfect health and of one labouring under well-marked gout? We are well aware of the great difficulty of conducting such experiments, and of the numerous sources of fallacy to which they are exposed; but certainly when we see that a large quantity of acid matter is eliminated from the system, either by the urine or by the formation of tophaceous nodosities about the joints during an attack, we naturally suspect that it previously existed (perhaps not in a free or easily recognised state) in the fluid from which every secretion is derived; and when we find, moreover, that by attention to diet, so as to avoid all indigestible and acescent food, and by the regular use of gentle alkaline remedies for a short time, the tendency to return of the disease is in a great measure prevented, our suspicions surely acquire the force of very reasonable presumptions.

Gout is the disease of all others which should be examined in all its bearings on those broad and comprehensive principles of analytic research, which M. *Liebig* has of late years introduced into the study of animal and vegetable chemistry. The peculiarities of the individual's constitution should be studied; the nature and composition of the food taken should be ascertained; the character and the amount of the excrementitious matters rejected from the system should be examined; and the influence, moreover, of diet on these should be carefully watched and noted. There is something faulty, we may rest assured, at some part or another of the elaborative process, by which the nutriment is converted into, and becomes assimilated with, the circulating fluids: some compound perhaps formed which is not formed in a state of perfect health, and which, acting as a noxious foreign matter, requires to be discharged at some emunctory—otherwise a morbid process, or in other words, a paroxysm of gout will be induced. For what is an ordinary attack of gout, but only a crisis of an antecedent illness, or, so to speak, an effort of the system to throw off some peccant matter which has become generated within the body? It would be easy to extend these remarks, and to point out how strictly this view of the disease is in accordance with the results of experience as to the most successful treatment of its various forms; but this we cannot do at present.—*Rev.*

M. Tessier on Hæmoptysis.

There is certainly nothing very original in the following remarks, except perhaps the style of language that is here and there employed. Surely our learned neighbours would do well to use a simple form of speech rather than have constant recourse to phrases which serve to mystify, not to explain.

"Hæmorrhage from the lungs may arise from various causes. Sometimes it is the result of a violent exertion or muscular effort, as running, rowing, lifting a heavy weight, &c. At other times, it is induced by the suppression of an accustomed discharge, as that from piles, &c. In a third set of cases it seems to be idiopathic and constitutional; it may then recur so frequently and so profusely as to cause the sudden death of the patient—as we recently saw in a strong athletic man, in whom however no very distinct lesion of the lungs was discoverable on dissection. In a fourth set of cases the loss of blood is connected with a tubercular state of the lungs; this complication is unfortunately the most frequent occurrence of all.

"Under the circumstances first alluded to, the treatment is very simple; the medical man should not be over officious; there is often no occasion for having

recourse to bleeding or other active measures; all that is necessary is to enjoin great quietude for a time, and to use such means as are best suited to prevent the recurrence of the hæmorrhage. If, however, there be a tendency to its return, it will very generally be proper to draw blood, unless there be some well-marked contra-indicating circumstances to dissuade the practice. For example, if the patient be at all phthisical, bleeding is to be used only with the greatest reserve, even although the pulse at the time be hard and concentrated. A most important therapeutic principle, with respect to the employment of this remedy, is that it should be in all cases subordinate to, and regulated by, the condition of the patient's constitution.

"Certainly the most precise index, as to the state of the vital forces and the functions of organic life, is the pulse. If this be hard, and if at the same time the disease is still in the state of concentration, there is a strong motive to draw blood, in consequence of the existing plethora, the exaggerated sanguification, and the tendency there must be to congestion in different parts of the body. By relieving the excess of the circulating fluids, we induce a critical change which is often most salutary.

"But in place of there being any genuine plethora, we may have to do with a case where the hæmoptysis co-exists with a dimunition in the energy of the vital forces, or again with a simple oppression of their activity, or lastly with a genuine atony of the whole system. In such circumstances, we should carefully examine the existing state of all the great organs of the body, in order that we may discover how each function is performed; as it is not unfrequent to find that a disturbance of the stomach, or liver, or kidneys for example, has had something to do with the pulmonic affection. If there is a decided saburral state of the stomach present, we should have recourse to an emetic. *Stoll* observed great advantage from the practice in a number of cases, to which he gives the name of bilious or gastric hæmoptysis. By getting rid of the gastric disturbance, we remove one of the principal elements of the disease, and we reduce it to a state of greater simplicity. Having destroyed one of the morbid states, we attack the other by means of blood-letting and other remedies."

M. *Tessier* then describes what he calls a nervous form of hæmoptysis, which is apt to occur in highly excitable females. His remarks however on this subject are exceedingly unsatisfactory and obscure; we suspect that he describes the disease rather from fancy than from actual observation. Does he allude to the not unfrequent form of pulmonic hæmorrhage that is liable to occur, when the catamenial secretion is very irregular or perhaps totally suppressed? If so, we can understand him; but not otherwise; as we never saw a case of what we should think of calling nervous hæmoptysis. The following passage may possibly be meant to apply to the amenorrheic form of the disease.

"The hæmoptysis, which is apt to occur in anæmic subjects, requires the exhibition of steel, bitters, and balsamic medicines. We must be careful not to confound such cases of passive hæmorrhage from the lungs with that form of the disease, which is connected with the presence of tuberculous deposits. In passive hæmoptysis, the blood rejected is usually of a black colour, diffluent and not so plastic as in health; the pulse too is usually soft and weak, and the muscular system flabby."

M. *Tessier* then treats of an *intermittent* form of hæmoptysis, which requires the use of bark for its cure; and closes his general remarks by acknowledging that there is sometimes no little difficulty in forming a correct opinion of the pathology of pulmonary hæmorrhage, and in determining the exact nature of the prevailing morbid element in each form of it. He insists particularly on the necessity of perseveringly continuing any mode of treatment for a length of time; and, by way of illustration, he alludes to a curious case in the practice of his experienced colleague, M. *Recamier*, who, by bleeding a patient *three hundred times* (!) in the course of two years, succeeded in finally subduing "une affection des plus rebelles."—*Gazette des Hôpitaux.*

REMARKS ON PHTHISIS.

There is much good sense in the following clinical observations, by the physician of the Hôtel Dieu, on this, alas! too well-known disease of every country.

"It is important to discriminate correctly the different periods or stages of phthisis, and to distinguish the various forms under which the disease is apt to appear; as much depends on the first of these considerations how our prognosis should be formed, and on the second, what remedial means hold out the best promise of relief, if not of cure.

"Each of the periods of phthisis has its peculiar therapeutic indications that require to be fulfilled; and it not unfrequently happens that there is a contradiction between those pointed out by the local, and those by the constitutional symptoms.

"The age too of the patient is a very material point to be taken into account, in our prognostic consideration. As a general remark, it may be said that there is much greater chance of arresting the course of phthisis after the age of 35 years, than at an earlier period of life. We not unfrequently observe, that, after the 'mezzo cammin di nostra vita,' the disease remains stationary for a length of time; and its duration may then be protracted for two, three, or even more years. But even under such circumstances as these, a real cure is seldom or never effected; the progress of the disease may be retarded, but it is no less surely fatal at last. We may soothe the suffering; we may check the symptoms as they arise; but all the while the weakness goes on increasing, and the vital energies are becoming more and more exhausted. The patient himself, perhaps, will not admit this; but his attendants too distinctly recognise the melancholy truth, and are forced to allow that, although their friend is much easier than he may have been, he is not at all capable of standing more fatigue—quite the reverse.

"If the medical man does not bear this constantly in mind, he may allow himself to be deluded by the reports made to him, and thus fall into the unpleasant mistake of believing that there is a positive amendment—even up to the very day before dissolution. It is necessary for him not to permit his hopes to at all control his professional judgment; otherwise he will most probably be much blamed afterwards for his want of sagacity.

"There is thus often very little or no correspondence between the condition of the local and that of the constitutional disease: the latter may be much modified by appropriate treatment, while the former is gradually becoming worse and worse. How rare is it that genuine vomicæ or pulmonary caverns ever undergo any salutary change! They may, indeed, under the influence of certain medications, contract somewhat in their dimensions, and the nature of their contents may become altered; but any real and permanent amelioration is not to be expected.

"Nevertheless, it is the duty of the physician never to neglect the use of any means which may serve to allay each symptom of distress as it may arise. Much may be done in this way, to prolong the life and soothe the suffering of the patient."—*Gazette des Hôpitaux.*

Remarks.—It has often occurred to us that medical men generally overlook far too much, in the treatment of such prolonged and distressing a disease as pulmonary consumption, the influence of the moral and religious feelings upon the progress and duration of the morbid changes. He, indeed, must be little of an observant practitioner, who has not remarked how much more rapid the course of one case is than that of another—quite independently of the extent of the existing lesion of the lungs, or of the general strength of the patient's constitution.

Now what is *the* cause—or, to speak more guardedly, one of the causes—of this difference? Is it not, (often at least,) the state of the sufferer's mind and feelings? and does not much, very much, depend on the simple circumstance whether these be calm and patient, or restless and unsubmissive?

The man, who regards every bodily affliction, not as a casual or chance occurrence, but as a chastening visitation of a Higher Power to try his faith, or to wean his worldly attachments, and who submits to them with a becoming composure, has a mighty advantage over him that views these things differently. Not only are the bodily sufferings of the former unquestionably less hard to bear at the time, in consequence of the greater tranquillity of his feelings, (for who has not found, in his own experience, that pain is worst borne when the mind is unhappy—

Mensque pati durum sustinet ægra nihil)

but the very morbid change that is going on within the chest, is found to advance much more slowly and gradually to its fatal issue. And surely there is nothing to surprise us in this. Whatever disturbs the evenness of the circulation, will be observed to promote the progress of any structural disease: and how can it be otherwise? Do we not constantly find that, if there be any febrile re-action in the system, such processes as those of suppuration and ulceration are greatly accelerated? and is it not the daily practice of the experienced surgeon to use every *physical* means in his power to moderate and subdue such re-action after operations and accidents?

Well, the restlessness of the feelings is a fever of the mind; and this cannot long continue without inducing its namesake condition in the bodily frame. The subject of the mutual re-action of mind and body is one the most important that can engage the attention of medical men; and yet it has never been treated as its value demands. We are all too much taken up with the *physique*, and too little with the *morale* of our therapeutic resources; and hence it is that most of us seem to think that we have amply fulfilled all our duty, if we but use our best skill in selecting from the materia medica the most appropriate remedies.

As a matter of course, we cannot enlarge upon this subject at present; but we are unwilling to lose the opportunity of expressing our own opinion of the vast importance of a religiously tranquil state of the mind in moderating the progress of organic disease, and therefore in prolonging life, as well as in blunting, at the time, the sharpness of all those aches and ills which flesh is heir to.—(*Rev.*)

CASES OF PLEURITIC EFFUSION, WITH REMARKS.

In the present dearth of novel and instructive matter in the Continental Journals, we select the reports of two cases of this very serious affection, which we find recorded in the clinical lectures of M. *Tessier* at the Hôtel Dieu. On no disease has the improved pathology of modern times thrown more light than on this. Its diagnosis may now, in most instances, be satisfactorily established by means of auscultation, and we are moreover possessed of several potent curative means, if there has been no unnecessary delay in having recourse to them.

Case 1.—The first case occurred in a woman, who was admitted into the hospital with pleuro-pneumonia on the left, and simple pneumonia on the right side. The inflammation of the substance of the lungs was quickly arrested by bleeding, &c., but the pleuritic symptoms did not so readily yield, and effusion nto the left thoracic cavity was the consequence, so copious that the heart was

pushed over to the right side. Repeated blistering and the use of purgative and diuretic medicines failed to cause the absorption of the fluid.

The case had been in this state for about a month, when it was determined to make a trial of Galvano-puncture. The two first applications had a remarkable effect; for there was almost immediately afterwards found to be a diminution of the effusion to about four finger-breadths below the clavicle, the resonance on percussion having again become normal over this extent. After several other applications of the Galvano-puncture, the resolution of the disease appeared to be almost complete; the resonance being re-established over more than two-thirds of the chest. The patient, feeling himself to be so much better, insisted on leaving the hospital before a perfect cure was effected.

Case 2.—The pleuritic effusion in this instance, also, was on the left side, and had supervened in a very similar manner to what took place in the preceding one. There was a visible enlargement of the left side; no respiratory murmur could be heard over it, and the sound on percussion was uniformly very dull, even in the sub-clavicular region. Symptoms, however, of a partial resorption began to make their appearance, and hopes were therefore entertained that the lung was not so much shrunk and contracted in volume, as it is usually found to be when the entire cavity of the chest has been filled with fluid—a state of the lungs that requires a long time before they recover their natural dimensions, even after the effusion has been dissipated.

It is in consequence of such an occurrence as this—the non-expansion of the lungs after the resorption of a copious pleural effusion—that many of those depressions and irregularities of one side of the chest, which are not unfrequently observed in deformed children, are to be traced. We have very little doubt, says M. *Tessier*, that, if the devolopment and progress of many cases of deformity in children were attentively watched, it would be found that they were often attributable to a pleural effusion that had become rapidly absorbed, while the lung had never recovered its normal dimensions.

This state of things is also not unfrequently observed in women—who, it should always be remembered are, in many respects, like children, both in their organization and in the diseases to which they are liable.

It is often stated, in books and lectures, that pleurisy is not a grave disease, and that it will generally give way to very simple treatment. This is a great error; inflammation of the pleura should never be regarded otherwise than as apt to be very serious in its consequences.

The treatment of the disease, when at all severe, will often require much practical discretion. For if bleeding and other depletory measures be carried too far, or their use continued too long, the tendency to effusion will be increased, while the active powers of the system may be too much lowered for the necessary absorption to take place with sufficient promptitude.

It is sometimes not an easy thing to determine the exact time when the change of treatment should be made. Now, it is in such cases, that the real value of auscultation cannot fail to be appreciated. If the effusion has already become very considerable, and the vital power has been much reduced before a correct diagnosis has been formed, the medical man will be placed in a very difficult and often most perplexing situation. The time for the further employment of antiphlogistic remedies is past, and yet the use of stimulants is not unattended with danger.

A fatal termination may be the consequence of an officious or mistaken treatment, as well as of the progressive aggravation of the disease, or of an inflammatory attack on the other side of the chest, with or without effusion at the same time. There is always very great danger in such cases as these. The fluid may, indeed, be withdrawn by operation; but the lung will probably not be in a state to recover its normal expansiveness, and the respiration is, therefore,

little or not at all relieved. Perhaps, too, air may find its way into the pleural cavity; symptoms of an inflammatory and suppurative character will then supervene—a state of things that is almost inevitably followed by death.

Occasionally, indeed, the purulent matter, that is secreted in the pleural cavity, makes its way into the air-cells and tubes of some part of the lungs, and is rejected by expectoration: immense quantities have been known to be discharged in this way. But, unless the patient's constitution is unusually robust and elastic, there is but a very slender hope of his recovery under such circumstances. In other cases, of however still more rare occurrence, an abscess forms in the side, and the pleural effusion finds an escape outwardly.

It is, therefore, obvious that the prudent physician will never be hasty in giving his prognosis in cases of chronic pleurisy, even although the existing symptoms may not indicate any unfavourable issue.

We may here add that this experienced physician, in his clinical lecture, makes a remark, the truth of which will be at once recognised by all men of experience.

"Whenever in a chronic affection, such as we have been treating of, you find every now and then occurring an exacerbation, or a fresh attack, of pyrexial symptoms, you may at once regard it as a most unfavourable omen, and suspect that there is some deep-seated lesion or another of the organization. As this was the case in the present instance, I without delay consulted M. *Recamier* as to the propriety of withdrawing the thoracic fluid, by performing paracentesis of the chest. Unfortunately for the credit of this operation, we are too much in the habit of delaying its performance, till the patient is in imminent danger. On withdrawing the trocar, from four to five *litres* of a puriform fluid escaped. For some days afterwards the side was quite resonant on percussion, although the lung was certainly not expanded during breathing, for no respiratory murmur could be heard. It is therefore probable that there was a certain amount of air (whether this had entered by the canula, it is not easy to say) between the two pleuræ. The symptoms went on, upon the whole, favourably. The lung seemed to be beginning to recover its expansibility; a slight murmur was heard in the sub-scapular region; and the ribs moved upwards and downwards, during the acts of respiration, more than they did before. As a metallic tinkling was occasionally perceptible, and succussion of the chest produced the sensation of a wave of fluid, there is every reason to believe that a considerable quantity of effusion is still present."—*Gazette des Hôpitaux.*

CASE OF HYDRO-PERICARDIUM: PUNCTURE AND EVACUATION OF THE FLUID, &c.

A youth, 19 years of age, was seized with sharp pain in the right side of the chest, great dyspnœa, and other signs of pneumonia. He had been ill for some time when he was taken to the Vienna hospital; the active stage of the disease had already passed over, and was succeeded by the signs of effusion within the thorax. The face had become puffy and œdematous, and expressed intense anxiety; the breathing was short, hurried, and accompanied with a rattling noise; there was a frequent cough, which brought on a pungent pain in the left side; the left jugular vein was much swollen, &c. On percussion, the whole extent of the sternal region of the chest was found to be very dull; under the left clavicle, however, and along this shoulder on to the axilla, the sound elicited was clear; but again it became dull over the lateral region of the chest. On the right side, the resonance was normal, except at the lateral parts from about the fourth rib. The liver was found to extend beyond the edge of the false ribs, for at least two finger-breadths. The impulse of the heart was very

feeble, and the sounds of its action very indistinct. There was a strong respiratory murmur (the expiratory one being unusually loud) heard over the whole extent of the left side, except in the cardiac region, and also over the front of he right side; lower down, howevr, it was scarcely audible. The pulse was rapid, small, and irregular; the urinary secretion was scanty and deep-coloured. The patient complained of a continual sense of pressure at the epigastrium, especially when he lay on the left side: firm pressure over the heart gave rise to a sharp pain in that region.

The diagnosis formed was that there was a considerable effusion within the pericardium—the consequence of pericarditis—causing the compression of the inferior lobe of the lung; also slight exudation in the right pleura, with an infiltration of the pulmonary parenchyma, the result of pneumonia; general bronchial catarrh.

As symptoms of a peritoneal effusion made their appearance in the course of a few days, it was determined to have recourse to *paracentesis pericardii* without delay.

The puncture was made (5th August) in the fifth intercostal space, about two inches from the left extremity of the sternum, and about one inch below the mamma—in order to avoid more certainly wounding the internal mammary, or any of the great vessels. At first, only a small quantity of reddish fluid escaped by the canula; but, by using gentle compression, as much as three pounds (livres) was discharged. The patient experienced great relief; and the double sound of the heart, as well as the "bruit de frottement," were heard much more distinctly immediately afterwards. Next day, symptoms of inflammation in the lower lobe of the left lung made their appearance: the patient was therefore bled. For several successive days, there was a manifest increase of the pericardiac effusion. Digitalis and iodine were administered, and mercurial frictions were employed at the same time.

As the disease was manifestly making progress, a second operation was performed, (22d August;) but on this occasion not more than three-fourths of a pound of fluid flowed out. Again there was an attack of pneumonia; but it was fortunately subdued without much difficulty. The state of the patient seemed to improve until the 4th of the following month, when the dropsy of the pericardium and also of the peritoneum began rapidly to increase. Death took place on the 12th.

Dissection.—Adhesions of the right pleura, and considerable effusion in both cavities of the chest—to the amount of between eight and nine pounds (livres) on the left, and of about five on the right side: both lungs compressed and flattened against the spinal column, and several patches of tuberculous deposit throughout their substance. Pericardium adherent to the heart over a great extent of its anterior surface; and several ounces of fluid within its cavity. The heart itself large and flabby; its cavities, especially those on the right side, considerably dilated, and filled with coagulated blood. From 15 to 16 *litres* of serosity within the peritoneum; this membrane somewhat thickened in several parts; the liver enlarged, dense, and of a brown-red colour.—*Schmidt's Jahrbücher.*

Remarks.—Most British physicians will unquestionably disapprove of the practice adopted in the foregoing case. No advantage could be reasonably expected from discharging the pericardiac fluid, while both cavities of the chest contained so much. We are not aware that paracentesis of the pericardium has ever been performed in this country. Without going so far as to reprobate the operation under any circumstances, the cases, we should think, in which it is justifiable, must be of exceedingly rare occurrence. It is a great error with many medical men to be desirous of doing something in every case: they seem

to forget that there is quite as much skill required in knowing when to do nothing, as to employ vigorous treatment when this is called for.

A propos, we remember an anecdote of a clever but sarcastic surgeon, which may deserve reporting. On one of his colleagues, who was rather a busy meddling sort of a practitioner, remarking, in reference to a dangerous case in the hospital, that in his opinion such and such were the "indications of treatment" to be pursued, he very coolly observed that, in his opinion, "the only indication was death." The lesson suggested is a useful one: *ne quid nimis.—Rev.*

ANIMAL MAGNETISM, A FASHIONABLE INTERLUDE IN PARIS.

Our lively neighbours cannot live without their jest, whether this be in the form of a mere *jeu-d'esprit*, or of a *spectacle* of some sort or another. If there has been a great fire in Paris (destroying perhaps a vast deal of property, not to mention life,) it is more than likely that the ladies dresses in the ensuing season will be of flame-coloured silk; and if cholera, or any other novel scourge, makes its appearance among them, we are sure to hear of the fashionable hats, bonnets, shawls, &c., being *à la cholera*, *à la grippe*, &c.

One of their favourite themes of sport in the present day seems to be Animal Magnetism. The following extract, from a very sensible article in a recent number of the French Medical Gazette, may probably amuse our readers.

"If this kind of charlatanism (the puffing of ignorant empirics) is disgusting in consequence of the serious injury to health that is often the result, there is another kind which, although less immediately hurtful to society, is now spreading upon a broader scale, and is likely to be ultimately attended with still more serious mischief; we allude to *Animal Magnetism*. This doctrine, utterly rejected by the Academy, and abandoned, at least ostensibly, by the intelligent *Savans* who embraced it a few years ago, has now fallen into the hands of a set of the lowest empirics, who seem determined to turn it to the most profitable account. Several of these *industriel* rogues are in the habit of exhibiting in the saloons of Paris pretended somnambulists (of both sexes,) who perform before the astonished spectators various mountebank tricks for the small sum of from 20 to 30 francs each performance! There is now scarcely a *soirée un peu sortable*, which has not its little somnambulic representation. And yet, in the name of all that is wonderful, these poor devils, whose address certainly is not a whit beyond the tricks of the most common juggler at a fair, are received into the most splendid drawing-rooms of the metropolis, amidst the most polished society of Europe—(well done, Monsieur Français! your nationality is always amusing)—as marvellous and exceptional beings, whose words are received as the responses of an oracle, and whose acts are almost believed to be supernatural!

"We have been present at some of these mystifications, and we fairly confess that we knew not whether to wonder most at the unheard-of impudence of the performers, or the extraordinary credulity of the spectators. And strange to believe! this is going on in the nineteenth century, in the midst of all that is most enlightened in literature and science, without opposition or reclamation.

"Besides these public exhibitions, we have private ones, got up at so much an hour; and then there are occasionally medical consultations—to the disgrace of our profession too often sanctioned by medical men. In short, there is not a street in Paris that has not its somnambulist juggleries.

"Religious fanaticism has been for some time past availing itself of animal magnetism, as an apt means to impose on the credulity of the ignorant; for it is not difficult to perceive in the pretended miracles—which after so many years of interruption, have lately began to make their re-appearance in different countries

in Europe—the influence of a superstitious belief once more brought into fashion by the modern disciples of Mesmer. The Church, it is true, has condemned the practice of Animal Magnetism, but it should be remembered that it has never denied the truth of the somnambulic exhibitions. Hence it comes that, while many attribute the phenomena to the operation of some immaterial fluid or to some particular condition of the nervous system, others are convinced that they are the work of the Devil himself. It is this latter opinion that seems to be the one that is generally received. We cannot wonder at this, when we call to mind that the bulk of mankind have always had a mighty partiality for whatever savours of the preternatural and miraculous. Hence it comes that now-a-days not a few cases of catalepsy, extasis, hysteria, mental hallucination, &c. are put down to the agency of demoniac *possession*."—*Gazette Medicale.*

Remarks.—It is rather curious to observe what has been going on in our own country about this mountebankery of science, and to notice the different views taken of it by the Clergy. While Mr. *M'Neile*, the well-known eloquent minister of Liverpool, has published a sermon "On the Satanic (no mincing word, certainly) Agency of Mesmerism," a pamphlet has recently appeared from the pen of a clerical brother, entitled "Mesmerism the Gift of God!"

Who shall decide, when doctors disagree?

REMARKS ON ITALIAN MEDICINE.

An intelligent French physician, M. *Combes*, has recently paid a visit to Italy, with the view of examining into the state of medical doctrine and practice in some of the leading schools of that interesting country. We have not yet seen the original work, but, meeting with a copious review of it in one of the Paris journals, we deemed it worth while to make the following extracts from it.

"*Hippocrates* has truly observed that 'in general whatever the soil of a country produces is conformable to the country itself." This remark is quite as applicable to the inhabitants, as it is to the vegetable productions, of a country. The character and temperament of man are in no slight degree influenced by the medium in which he is born and developed; his bodily health, as well as the passions of his soul and the faculties of his mind, are all more or less under the control of the physical circumstances in which he is placed. If he is the king of nature, his sovereignty resembles that, not of an arbitrary or despotic, but of a constitutional, throne, hemmed in by charters and by parliaments; and the power that he wields is ever under the weight of legal restrictions. How little suffices to alter the character and the energies of human beings! A few additional degrees of temperature, the exposure or non-exposure to a certain wind, the nature of the soil on which they live—these, not to mention many other circumstances, are found to modify not only the character and manners of a people, but even the vigour and the power of their intellect. You aspire to the glories of science, and the atmosphere which you breathe condemns you to become an artist; your mind dreams on discoveries of practical philosophy, and pants to tread the path of calm observation, and you find that, in spite of all your wishes, your imagination cannot resist the allurements of nature around you, but plunges into the fairy domains of ideality and romance."

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"Under whatever clime human beings come into this world, they all bring with them at birth the same constitution of moral development; the same faculties lie dormant in the souls of all. These indeed are unequal from the first in different persons, in consequence of certain hereditary elements which stamp a peculiarity on each nation, each family, and each individual; and this inequality

will be more and more strongly marked according to the influences of climate and of early education. This is the reason why nations, although possessing most of the attributes of intellectual greatness, are nevertheless distinguished from each other by the special development of one faculty in a predominant degree. In all ages have the Greeks been pre-eminent for the fervour of their imagination, and the inhabitants of Britain for their cold and prudential reason.

"Nations, like individuals, have therefore their characteristic temperaments or idiosyncrasies of constitution. Now the temperament of Italy is its ideality; its very existence is eminently artistic. Living in a region clothed with light (*vestitos lumine colles*,) bathed in a warm and balsamic air, and breathing an atmosphere of romantic associations, little is the wonder that its inhabitants are so distinguished from almost every other people for the richness and grace of their sensual conceptions. Every thing in nature around them leads the mind to indulge in images of softness and beauty, and to withdraw it from abstruse and elaborate studies. Now what is the result of this tendency in reference to scientific pursuits? In schools, where pupils and masters alike have all more of the poetic temperament than they are themselves aware of, the character of the instruction will certainly be more or less dogmatic; and why?—because implicit faith is a positive *besoin* of such a mental organisation. Such a state of mind naturally leads on to a taste for generalizing on all subjects, and this very tendency is promoted by the copious richness of their sonorous language. Thus it is that the systematic conceptions of the Italians, proceeding from deep conviction, lead to exaggerated applications in theorising—and often too to an inordinate rashness in practice.

"The characteristic features of French medicine in the present day are a sort of disrelish for all systems, and a taste for the elaborate investigation of every problem of inquiry. Hence the practice of rigorous and oft-repeated observation, the numerous experiments, and the constant recourse to the aids of the scalpel, the test-tube, and the microscope. Indicative of the same thing is the subdivision of science into a number of different branches. Each of these is pursued with indefatigable zeal by its different votaries.

"It is scarcely necessary to allude to the characteristics of German medicine; the same laborious curiosity and indefatigable research, the same fondness for mystical speculation, the love of the marvellous and extravagant in physics as well as in metaphysics—these long have been, and still are, the prominent features of the German school." * * * * *

In Italy at present (according to the observations of M. *Combes*) there are very few men, who apply themselves with diligence to the patient investigation of details upon any particular subject of inquiry. Most of the physicians have adopted certain general principles of medical doctrine and on these they base their practice. Hence it is that almost all their treatises assume the synthetic form, and that, even in their works of elementary instruction, the exposition and description of details are too often sacrificed to the abstract generalities of an ingenious dogmatism.

But let it not be forgotten that we are talking of a country which has produced a *Spallanzani*, a *Morgagni*, a *Scarpa*, &c. and can still boast of *Bellingeri*, not to mention other distinguished names of medical literature. Yet, in spite of these eminent exceptions, it cannot be denied that many of the branches of professional knowledge have made but little progress, for very many years, on the other side of the Alps.

Physiology has retained pretty generally a purely dynamic character; the classical work of *Medici* does not even mention a vast number of well-established facts, and the same remark holds true of the lectures of Professor *Martini* at Turin. If such be the state of Physiology, or that branch of medical science that treats of the functions of the body in a state of health, we cannot be surprised that those of Pathology and of clinical medicine are very faulty and defective in many respects.

"In some districts of Italy, and especially at Naples and Modena, Hippocratism is altogether prevalent. In the latter city, indeed, the Faculty of Medicine may be considered as an association less for instruction in modern medicine than for perpetuating the doctines of the Coan sage. The orthodoxy of the school is based upon them; everything is redolent of antiquity; the students are taught to regard the Aphorisms as the oracles of medical truth; when they aspire to the doctorate, they are called upon to expound and illustrate one or more of these pithy sayings; and it is with their hands, laid upon the works of the old Greek, that they take the oath upon the day of their inauguration.

"While the doctrines of the Hippocratic Medicine, more or less liberally interpreted, are almost universally received through the whole of the South of Italy, the northern half of the Peninsula has been long agitated by the disputed tenets of Contra-stimulism. Turin, Pavia, and especially Milan, are the head-quarters of this school. *Rasori* its founder started, it is well known, as a disciple of the Brunonian doctrines, and was the translator of the Scotch physician's work. All the phenomena of disease he strove to reduce to one simple morbid action, viz. excessive or deficient stimulation; and, like every other advocate of an exclusive system of pathology, he fell into the most egregious blunders, which proved to be injurious alike to sound theory and to safe practice. All diseases he considered to be systemic or general; and local inflammations therefore he looked upon as mere complications or accidental phenomena—the very reverse of the Broussaian creed. Professor *Tommasini* of Parma adopted a sort of intermediate doctrine between these conflicting systems. Assenting to the general principle of his fellow-countryman *Rasori*, he was too sagacious not to observe that local irritation, when extensive or long continued, is apt to give rise to constitutional diseases. Let us not deprive this distinguished physician of his due; it is right to acknowledge that he clearly enunciated the importance of local affections, as the cause of many diseases, before *Broussais* had published a line upon the subject."

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"One of the most eminent physicians of Italy in the present day is M. *Buffalini* of Florence. His clinical lectures draw a large concourse of students, and his fame nearly equals that of his distinguished rival of Parma, *Tommasini*. He is generally regarded as 'un medecin organicien;' and yet his lectures and practice savour strongly of the Essentialist school. In commenting upon any case of fever, he pays minute attention to every appreciable alteration alike of the fluids and of the solids, and he does not hesitate to acknowledge openly that the changes observable, either in one or in the other, are by no means uniformly in accordance with the severity of the constitutional affection, or can be considered as the proper *causes* of it. In many respects he is a decided Humoralist; but, while leaning strongly to the opinion that most fevers are attributable to certain changes in the circulating fluid, he on the whole does not trouble himself much with prying into the nature of morbid individualities, but contents himself with scrutinising their exciting causes, the various symptoms which they exhibit, and with devising the means best fitted for their relief. Every one, who has had an opportunity of witnessing his practice, speaks in high terms of it: avoiding the pernicious errors of Contra-stimulism, (which he has contributed in no small degree to throw into discredit,) he shows great discretion and tact in the use of his remedies. He has published an able work entitled '*Des fondemens de la Pathologie Analytique*.'

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"Italy is far behind France in many of the departments of medical science, and certainly in none more so than in Chemistry. There are no good laboratories for the preparation of medicines, in almost any part of the country; and hence little or no progress has been made in Toxicology, although the writings of M. *Orfila* have been long highly appreciated. What will probably surprise

most travellers, as much as anything, is to find that no correct analysis of the numerous mineral waters of Italy has been made by any native physician.

"Italy possesses more journals of medicine and pharmacy than France does; (we certainly were not prepared for this announcement;) but the division of the country into so many separate states places a great bar to their diffusion and general usefulness. The medical press suffers much from the consequences of the general political organism of the country; it has not a few obstacles to overcome, and a good many dangers to avoid. Thus, for example, when Homœopathy first made its appearance at Milan, under the patronage of the Austrian government, the subject, it was soon found, could not be discussed in all its bearings with perfect freedom. The whole business of journalism is fettered and cramped by restrictions and vexatious annoyances. Hence it is that scarcely any of the periodicals bear that stamp of originality and freedom of opinion, which constitute the main utility of such publications; and that their chief contents are mere compilations from the French, English, and German journals. As long as such a state of things lasts, we cannot look for that energy and devotedness in the cause of professional advancement which we find in the writers of France, Germany, and Great Britain. Surely medical science may fairly be regarded as a free and open field for unlimited boldness of speech and inquiry; but, alas! it has always been found that tyranny is never satisfied until it has brought everything under its iron yoke."—*Gazette Medicale.*

STATISTICS OF INSANITY IN FRANCE; INFLUENCE OF CIVILIZATION.

The following letter was read by M. *Briere de Boismont* at a recent sitting of the Royal Academy.

"Five years ago, I had the honour of reading a paper before this learned assembly upon the influence of Civilization on the production of Insanity, and I then endeavoured to show, by reference to numerous tables, that the frequency of this most melancholy affliction increases proportionately with the advances which a nation makes in social and mental attainments. Whatever opinion may be formed on this subject, no one can dispute the fact that moral causes give rise to alienation of mind more frequently than those of a purely physical or bodily nature. In 1807, *Pinel* distinctly enounced the truth of this position. Out of 683 cases, which had occurred within his own observation, as many as 464 were clearly attributable to moral causes. *Esquirol* too has added his valuable testimony to the same effect; for out of 274 cases, which he has reported, 167 were traceable to the influence of psychical disturbance. According to the recent very elaborate researches of M. *Parchappe*, the relative number of cases arising from mental and from bodily causes is in the ratio of 63 to 37—the first being therefore nearly double the second.

"If then the influence of the one cause be so much greater and so much more generally felt than that of the other, we cannot be surprised to find that the frequency of insanity should increase with the advances of civilization, more especially in those countries where the mind is more worked and excited than elsewhere.

"It is exceedingly difficult to obtain exact reports of the number of the insane in different districts of France. Although Government has expressly ordered that each department should have its separate institution, this is still but very imperfectly carried out in various parts of the country.

"M. *Guislain*, whose excellent works on mental disorders are universally appreciated, has stated, in his official report, published by order of the Belgian Government, that the number of the insane in that country (as far as can be ascertained) is 5105, out of a population of 4,165,953 inhabitants; but he adds

that this number gives only about two-thirds, or so, of the entire amount, in consequence of the number of insane persons dwelling in boarding houses, convents, &c."

M. *Boismont* calculates the number of the insane in France at nearly 30,000.

THE GEOGRAPHY OF DISEASES.

During the course of the present year, there has been published in Paris a work, entitled An Essay on Medical Geography, or studies of the laws which preside over the Geographical distribution of Diseases, and of the Topographic relations existing between them; the Laws of Coincidence and Antagonism, &c.

The subject is certainly a good one for a clever man to write upon, as the field is scarcely at all pre-occupied, and the information communicated may therefore be expected to be more novel and attractive than what forms the staple of most modern medical works. We are indebted to the pages of the Gazette Medicale for the following notice of M. *Boudin's* Essay.

"The history of diseases has its Chronology as well as its Geography. On the first of these points, M. *Pariset* has recently made some very ingenious observations, in the way of preface to his Exposition of the Modern Origin of the Plague. Some of the German physicians have enlarged much on the doctrine of morbid metamorphoses or transformations, and have endeavoured to apply its principles to the elucidation of the development and diffusion of other diseases.

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"The domain of Medical Geography is already rich and extensive, and travellers are yearly adding to its resources. M. *Boudin*, the author of the work before us, first announced the germ of his ideas in his Treatise on Marsh Fevers, and it is most gratifying to know that there seems to be every probability of these being now fully carried into effect, since the recent institution of "*medecins-voyageurs*" by the Royal Academy.

Botanical writers may justly claim the merit of having first directed the attention of philosophers to the importance of geographical position as an important element in scientific inquiries, by pointing out the influence of climate on the distribution of plants, and thereby proving the sympathy, so to speak, of some, and the repulsion of other, general species for each other.

M. *Boudin* frankly acknowledges the source whence he derived the first hint of his ideas; and he adopts nearly the same division of geographical causes or agencies in reference to diseases, which several botanists have established in reference to the vegetable kingdom. These are—1, the Latitude and Longitude; 2, the elevation above the level of the sea: and, 3, the Geological character of the soil.

The first of these causes—the latitude and longitude of a place—exercises a very marked influence, not on the character or form only, but even on the very development and existence, of certain morbid phenomena.

The Yellow Fever, the Plague, and the Cholera, have their peculiar and well-defined theatres of action, at least in their state of *endemicity*: these theatres being the deltas of three great rivers, (the Mississippi, the Nile, and the Ganges,) in the hot regions of the earth. With certain modifications, the peculiar nature of which has not hitherto been well explained, the *embouchures* of other rivers, and generally indeed all marshy countries, are observed to be the seat of certain fevers which are characterised by having an intermittent or remittent type. It is for this reason, among others, that M. *Boudin* has been led to conclude that there must be a sort of family resemblance, so to speak, between the Yellow Fever, the

Plague, and the Cholera on the one hand, and Paludian Fevers on the other; and he goes so far as to conjecture that all these diseases are to be regarded only as different manifestations of one and the same morbid agency. Among other circumstances, he points out a very curious feature of resemblance which is said to be common to them all, viz. their power of excluding pulmonary consumption and typhoid fever—diseases which, *en revanche*, exercise their destructive sway over regions that are not marshy or burned up with a tropical sun.

The great *Humboldt* has remarked, in his most valuable work on South America, that the highest limit of the *melastomatous* tribe of plants is likewise found to be that of the Yellow fever: it would therefore seem, that its morbific germ does not reach higher than a certain elevation above the level of the sea.

The plague, too, shows a somewhat similar character; for it has been remarked at Cairo, that while the lower quarters of that city are grievously afflicted with it, the citidel is usually quite exempt from its influence.

At Constantinople, also, it is noticed that it seldom reaches as high as the elevated points of the seven hills, on which this Empress of the East is built. Nearly the same thing may be said of the *Endemic*, but certainly not of the *Epidemic*, Cholera.

These facts, therefore, clearly prove that the elevation to which the morbific germs of certain diseases are usually carried in the atmosphere, is by no means considerable. If space permitted us, we might here show that the germs of other diseases are limited to a very small circuit around the foci of their action, unless, indeed, their diffusion be promoted by the agency of the wind, or by direct transport. This subject, however, we cannot enter upon at present.

As to the influence of the Geological character of the soil on the development and diffusion of diseases, the Plague, like other marsh-maladies, has been observed to shew a marked preference to districts of an argillaceous formation. Pulmonary consumption and follicular Enteritis are said to be most prevalent in chalky countries; Goitre and Cretinism too have been alleged to be most common upon such formations; and some go so far as to tell us that it is from this circumstance that the latter name is derived."

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"The character and composition of the water in any place should always be taken into account in studying its prevailing diseases. The water at Oran in Algeria, is found to contain nearly twenty times as much matter dissolved or suspended in it, as that of the Seine. Surely such a circumstance as this cannot fail to have a decided influence on the health of the inhabitants: may it not account for the great frequency of dysentery in the former place?

M. *Boudin*, having discussed the various topics now alluded to, proceeds to examine the curious subject of the latency or *incubation* of many diseases—which may thus break forth at a distance from the point where their germs were developed. The period of concealment or abeyance, so to speak, of morbific poisons, within the human constitution, varies a great deal in different cases. That of Hydrophobia it is well known, may extend to three, six or even twelve months; that of marsh miasma for the same or even a longer period of time; and the malignant fever of Marseilles has been observed, in many instances, to be lying dormant for several months after the exposure of the person to the exciting causes.

The last Chapter of the work is occupied with a consideration of the Laws of Geographic Coincidence and Antagonism; more especially in reference to the alleged reciprocal repulsion of phthisis and typhoid fever on the one hand, and of marsh fevers on the other. This subject has of late excited very great attention in France, and has been repeatedly canvassed in the Royal Academy and other medical societies. M. *Boudin* is disposed to admit the correctness of the idea in question, and he has taken much trouble to shew, by an elaborate

appeal to statistical reports, the extreme rarity of pulmonary Consumption and Typhus in all districts that suffer much from remittent and intermittent fevers. The long-established celebrity of d'Hyeres has been supposed to be owing, in a great measure, to the marshy character of the surrounding country.—*Gazette Medicale.*

Remarks.—While reading the preceding observations, more especially those which refer to the influence of the water, soil, &c. upon the diseases most prevalent in any district, we were strongly reminded of the admirable instructions given on this very subject by *Hippocrates* in his treatise "De aere, aquis et locis." Great stress is laid upon the necessity of paying due attention not only to the times and seasons of the year, but also to the situation and locality of any particular city or place; its exposure to the East or West, or to certain winds, &c.; the character of the surrounding country, whether this be marshy or dry, high or low; the quality of the water that is used as drink, and the general diet of the inhabitants; &c. The old Coan was much wiser in his generation than many of our modern *philosophes*, who, in their vain attempts to raise medicine to the rank of an exact science, seek to lay down certain fixed rules or principles to determine the treatment of diseases in all seasons and places alike.—(*Rev.*)

DR. PEREYRA ON THE TREATMENT OF PHTHISIS: USE OF COD-LIVER OIL.

The author of this *brochure* has been one of the physicians of the St. Andrew Hospital, at Bourdeaux, for the last eight or ten years, and has had his attention particularly directed to the pathology and treatment of pulmonary Consumption. This sad scourge of France, as well as of our own country, seems to be exceedingly common in that city and its neighbourhood, in spite of the prevalence of ague and other marsh diseases, which arise from the damp character of the soil.

The chief object of Dr. *Pereyra's* pamphlet is to recommend, to the notice of his professional brethren, the use of Cod-Liver oil in the advanced stages of Phthisis, as a remedy that promises unquestionable benefit in many cases which have resisted every other known medicine. It is but fair to the author to state that, judging from his writing, he seems to be not only a practised stethoscopist but also an intelligent and observing physician. There is no air of quackery about his statements; they are uniformly fair and candid.

In several of the cases related by him, in which a very remarkable suspension of the morbid degeneration of the pulmonary parenchyma took place, there were present all the symptoms (auscultatory as well as natural) of one or more tuberculous caverns in the upper lobes of the lungs.

The plan of treatment usually pursued was to exhibit the oil in doses of a tablespoonful or so, twice or thrice a day, and to put the patients on a nourishing and tonic course of diet.

Dr. P., also, in most of his cases has recourse to some artificial drain, established near the seat of the chief lesion—either on the parietes of the chest, or in the flesh of the shoulder. This is unquestionably good practice, and deserves to be more generally adopted than it is.

Here is a brief account of one of the cases. A young prostitute was admitted into the hospital with all the symptoms of confirmed phthisis—hectic fever, night-sweats, purulent sputa, pectoriloquy, accompanied with a cavernous *souffle*, in two places over the upper part of the right side of the chest.

Under the treatment which we have mentioned, the girl recovered her health astonishingly, and, after the lapse of three months, was so well as to leave the

hospital. "I auscultated the chest at that time, and ascertained distinctly the existence of the two caverns; the crude tubercles seemed to me to be less extensive than they were some time ago, and over several parts of the affected lung the respiratory murmur was much more natural." Three years after this date, Dr. P. had the opportunity of repeating his examination, and then found that the pectoriloquy was still very audible over the same points that it had been—but the caverns now seemed to be decidedly smaller in their extent; and, as there was no longer any tuberculous *bruit* heard during respiration, he inferred that the surrounding substance of the lungs had partially recovered a more healthy condition.

It is quite unnecessary to adduce the particulars of more of the cases. In several of them, the accuracy of the diagnosis was entirely confirmed by the appearances found on dissection. This fact naturally gives us more confidence in the other statements of the author.

Even in the more successful cases, he distinctly warns his readers not to suppose that a complete cure, or restoration to a perfect state of health, took place, if there was any cavernous excavation in the substance of the lungs.

The excavation still continued, but the progress of disorganization seemed to be arrested, and the indurated state of the surrounding pulmonary parenchyma was sensibly diminished.

The auscultatory phenomena showed that such was the case; for the pectoriloquy and cavernous blowing were still audible, but the respiratory murmur was more uniform and regular.

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One great drawback to the use of the cod-liver oil is its extreme nauseousness. Most patients vomit every dose for the first two or three days; but then, if steadily persevered with, it will usually remain on the stomach: it is curious, that young children will often swallow it without much repugnance. When the cough is very troublesome, Dr. P. recommends that the cyanuret of potassium be administered along with the oil: he has seen admirable effects from the judicious exhibition of this medicine. A nourishing diet of animal food, &c. is a powerful auxiliary to the use of the cod-liver oil, in enabling the system to stand up against the enfeebling effects of the disease, and to make an effort to arrest the disorganizing process.

This treatment appears to be, on the whole, very judicious. Like every wise practitioner, Dr. P. varies it, as a matter of course, according to the character of the existing symptoms. If, for example, any signs of pleuritic complication come on during the use of the tonic regimen, he at once discontinues it, and has recourse to leeches, cupping, &c.—to resume it, however, when the inflammatory affection subsides.

He is a great friend to the use of counter-irritants, especially of issues and setons. He says: "In almost all my patients I establish a drain in the arm: this usually exerts a very favourable action upon the entire system. I always advise them to keep it open for several months after leaving the hospital, as it assists most powerfully in confirming the salutary check that may have been made on the disease. Those, who have had the discharge too soon dried up, speedily found that their cough, &c. became more troublesome; and many have therefore come back to have it re-established."

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If diarrhœa be present, the cod-liver oil must usually be discontinued for a short time, and the strong diet be changed to one of a milder nature—such as rice, eggs, &c. The acetate of lead is one of the best remedies for internal exhibition under such circumstances; it serves also to check the night-sweats. Whenever the patient has a decidedly chlorotic look, Dr. P. recommends that steel medicines be freely given.

The following remarks by our author on the frequent coincidence of ague and

consumption at Bordeaux, deserve especial notice at the present time, when his countrymen make this question quite the "cheval de bataille" of their academic controversies.

"I must here," says he, "mention a complication which is perhaps peculiar to our geographical position; viz. a quotidian intermittent febrile condition, which has some points of resemblance with the paroxysms of the hectic fever, that is usually present in all cases of confirmed phthisis. But they may be distinguished by the circumstance of the attacks of the former being always more regular and stated than those of the latter. The shivering of ague usually occurs about the middle of the day, and the strong sweating stage about midnight. Whenever we have reason to suspect the existence of a co-existent ague, we should have recourse to the quinine, without discontinuing the use of the former medicines and regimen. Usually the patients bear the quinine remarkably well, and its effects are so speedy and decided that, after the lapse of a week or so, we are enabled to dispense with it. * * * *

"Intermittent fevers are so prevalent in and around Bordeaux, that they constitute more than a fourth part of our diseases. Their presence in the system decidedly promotes and accelerates any tendency that there may be to tuberculous deposits.

"As we have already explained, whenever we have reason to suspect the existence of such a complication, we should at once get rid of the ague by the administration of the quinine, either alone or in conjunction with opium."

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Dr. P. mentions it, as the result of wide observation, that "one of the most frequent causes of phthisis among the youths in Bordeaux is the depraved habit of masturbation. There are few young men, who have not confessed it to me; and I have strong reason to believe that those of the other sex, although less willing to acknowledge their fault, are quite as culpable."

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The question as to the communicability of consumption from one person to another has usually been decided in the negative. Our author however intimates his doubts upon the subject; having seen so many cases in which the disease appeared to have been transmitted to persons who have been in constant attendance upon the sick. Often has he observed strong robust women begin to exhibit phthisical symptoms not long after the death of their husbands from the disease; and occasionally also the reverse of this. It is therefore only a wise precaution to avoid, as much as possible, inhaling the breath of any one labouring under the advanced stage of consumption. Dr. P. alludes also to the well-known circumstance of many famous chest-doctors—for example, *Laennec, Bayle, Delaberge, Dance*, &c.—having fallen a sacrifice to the disease, and thinks it not at all unreasonable to suppose that their continual and often very prolonged visitation of phthisical patients may have had something to do with the origin of their ailments. He therefore strongly advises those physicians and students, who may have any hereditary tendency to the disease, to be more than usually cautious not to inhale the breath of such patients, and to avoid unnecessary delay in their visits."—*Du Traitement de la Phthisie Pulmonaire, par E. Pereyra*, pp. 84. 1843.

Remarks.—That so penetrating and active a medicine as cod-liver oil—which unquestionably possesses, according to all accounts, no ordinary remedial powers in many forms of scrofulous disease—may be of decided benefit in certain cases of pulmonary phthisis, is far from being unreasonable. It appears to be a general stimulant, in a moderate degree, of every part of the system, and, from the small portion of iodine present in its composition, it is well suited, we should think, for persons of a strumous habit. Whether a due combination of this potent substance with some of the vegetable balsams, such as the Peruvian or

the copaiba, might not be substituted for the cod-oil—either when this cannot be procured, or when the patient's stomach will not retain it—deserves a trial. We know that all the medicines of this class (the balsamic) have a marked influence on the respiration; they appear to be very rapidly absorbed, and conveyed out of the system, partly by the lungs and partly by the kidneys. In many cases of chronic bronchitis, senile catarrh, peripneumonia notha, &c., no remedy is better than the Copaiba or Peruvian balsam. Is it not possible that, when iodine is administered in combination with such substances, it may be directed in an especial manner to those organs which they more immediately affect?

The practice, adopted and recommended by Dr. *Pereyra*, of establishing an artificial drain in the immediate neighbourhood of the chest, (as in the flesh of the shoulder,) whenever one of the upper lobes of the lungs is diseased, is unquestionably very judicious, and should be followed more generally than it is. We have often witnessed decidedly good effects from this plan, in retarding the progress of the pulmonary lesion, and can therefore bear witness to the wisdom of the advice. The use too of a nourishing, but not a stimulating, diet, so as to support without over-exciting the powers of the system, should never be neglected, whenever the patient's stomach will bear it. On the whole, we report favourably of this pamphlet of Dr. *Pereyra*—it is a candid and faithful statement of an enlightened physician.—*Rev.*

PHYSIOLOGICAL MEMORANDA ON THE RELATIONS BETWEEN DIGESTION AND RESPIRATION, &c.

The following observations appear to be based on those interesting researches, which of late years have been so assiduously carried out by MM. *Dumas* and *Boussingault* in France, and by M. *Liebig* and others in Germany. The great interest and importance of the subject will always command for it the attention of those who take a pleasure in making themselves acquainted with the marvellous workings of the living system—as they are revealed in the unmarred book of Nature herself, and not in the disgusting exhibitions of a vivisection room.

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"The activity of the Digestion appears to be, in a great measure, influenced by, and proportionate to, that of the Respiration. Whenever the latter function is very highly developed, or more than usually vigorous, we find that the animal will require food more frequently and in larger quantities than under the opposite conditions. A bird will die from starvation in the course of two or three days; while a serpent will live for months without any supply of nourishment. For the same reason, an infant, whose respiration is well-known to be much more rapid than that of an adult, requires to be fed more frequently for the first year than in after-life. How is it that hybernating animals can survive a whole Winter in their state of almost asphyxiated inaction?—simply because the respiratory process is all but arrested. During ordinary sleep the breathing is much slower than when we are awake and taking exercise; and hence it is (in some degree at least) that no desire for food is experienced for so many hours. Every one must have found by his own experience that lively conversation after eating is one of the best digesters. May not this be owing in part to the active play of the respiration, as well as to the general pleasing excitement of the whole nervous system?"

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"In estimating the activity of the breathing, (and consequently the quantity of oxygen absorbed into, and of carbon eliminated from, the animal system,) we

must attend not only to the number of respirations in a given space of time, but also to the temperature of the air that is respired. As the same, or nearly the same, volume of air is inhaled at each act of breathing in all seasons, it is quite obvious that, unless the respiration be considerably quicker in Summer than in Winter, the consumption of oxygen must be much less at one season than at another, and therefore (as explained in the preceding paragraph) that the necessity for food will become so much the less urgent. Now, although the breathing is somewhat quicker in warm than in cold weather, the increased frequency is by no means proportionate to the diminished density of the air. Hence it may justly be laid down as a general truth that an animal consumes less oxygen in Summer than in Winter, and therefore that it requires a smaller amount of nourishment. Does not the experience of every man prove the truth of this observation in his own case? and is it not the case that his appetite for strong animal food is much greater, when the weather is cold and bracing than when it is hot and relaxing? We must not, it is true, omit from our consideration the direct influence of various outward impressions on the Nervous system; the digestion, like every other function of a living body, is not a little affected by whatever either invigorates or enfeebles the general powers of the constitution. But, independently of this *vital* or *animal* agency, there is another of a *chemical* and *organic* kind, (such as we have been endeavouring to explain) which has never been rightly appreciated until of late years, when Animal and Vegetable Chemistry has been studied with such a philosophic spirit. By the act of Respiration, a certain quantity of oxygen is absorbed into, and a certain quantity of carbonic acid is eliminated from, a living animal body. As the basis of the latter gaseous substance must unquestionably be derived primarily from the food that is taken into the system, it may at once be presumed *à priori* that there is a direct relation and sympathy between these two most important functions."

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"If then the consumption of oxygen during the process of respiration is so much more active in cold than in warm weather, it may naturally be asked how is it that the system relieves itself of the excess? or in what manner does it employ the large supply of this element in the first of these conditions? The answer to this is easy. For in proportion to the amount of oxygen absorbed by, so is that of carbonic acid evolved from, the lungs. Now the amount of the carbonic acid evolved depends entirely on the activity of the digestion, and on the quantity of carbon which is derived from the food that is eaten, and which becomes incorporated with the blood. When the digestion is vigorous, and the quantity of food consumed is great, a large supply of materials abounding in carbon and other elements is continually being added to the mass of the circulating fluid. These materials serve for different purposes. Besides contributing to the formation of new compounds to repair the constant waste that is going on in every part, a large proportion of the carbon combines with the oxygen that is always present in the blood, and passes out of the system at every act of respiration. The lungs are therefore the great emunctories for the discharge of carbon out of the body. * * * * *

"Such being the case, we can at once understand the reason why the system requires a larger supply of strong nutritious food in Winter than in Summer, and why the inhabitants of the Arctic regions live almost exclusively upon articles of an animal nature, while those of the tropics may be sustained by a diet that consists almost entirely of vegetable matters. In the former, a much larger amount of oxygen is consumed during respiration, in consequence of the greater density of the air that is respired. The result of this is that the digestive function is exceedingly active, and it therefore requires a greater supply of strong food, in order to furnish a sufficient quantity of carbon, &c. for the formation of the large supply of carbonic acid, that is afterwards eliminated by the lungs.

"For the reasons now given, it may be readily understood why it is so much easier to fast for a length of time in warm than in cold weather, and why a lighter diet should be used in Summer than in Winter. Hence too we perceive the cause that an ill-fed animal will become emaciated much more rapidly in the latter than in the former season; for, if there be not a sufficient supply of carbon yielded by the food in order to combine with the oxygen absorbed during respiration, the system must derive it somehow, and this will be at the expense of the substance of its own body."

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"The reciprocal action of the elements of the food on the one hand, and of the oxygen diffused through every part of the body, by means of the circulation, on the other, is the source of Animal Heat. This most important and curious function is now recognised to be owing (at least, in a very great measure) to the direct union of the oxygen in the blood with some combustible substance of a carbonaceous nature. It is obvious therefore that, just in proportion to the amount of carbonic acid that is formed within the system and evolved during respiration, so will be the degree of caloric generated in the animal system. Now we have already seen that this amount is influenced by the activity of the respiratory changes on the one hand, and by the quantity and quality of the food that is consumed on the other. Whenever the respiration is quick and active, the heat of the animal body is high; and *vice versâ*. For this reason it is that the temperature of birds is higher than that of any other class of animals, and that the young creature is always so much warmer than the old. In common parlance we say that in age the blood is *chilled*: the remark is quite true, physically as well as poetically.

"Again, we have strong grounds for believing that more caloric is generated in the animal body during cold than during hot weather. Indeed, this must be so for, as there is a larger absorption of oxygen and al arger formation or carbonic acid in the one condition than in the other, so there must necessarily be a greater development of caloric produced. It is thus that Nature so admirably compensates for the great abstraction of heat from an animal body during Winter, when the temperature of the air is so much below that of its surface. It is only on some principle like this, that we can account for the wonderful uniformity of the temperature of living animals of the same kind in different latitudes:—less heat being generated within the body in hot climates, because less is abstracted from it; and *vice versâ*. As we have already explained, the cause of the lesser generation of animal heat in the one case than in the other is the lesser formation of carbonic acid within the body; and this again is in consequence, on the one hand, of the smaller consumption of oxygen during the process of respiration, and on the other, of the smaller amount of carbon received from the food that is eaten. The fruits, which serve as the chief means of nourishment to the inhabitants of tropical countries, do not contain above 12 per cent. of carbon; while the whale blubber and seal oil, on which the Laplander feeds, contain as much as from 65 to 80 per cent. of the same material. In Winter we all find the need of an animal diet; in Summer we require but little flesh food, and instinctively long for a lighter diet of vegetables and fruits. We thus perceive how beautifully Nature has accommodated all her arrangements to the varying conditions of season and climate; and we, at the same time, derive an important dietetic rule for the regulation of our living, according to the circumstances in which we are placed."

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"From what has been said, in some of the preceding paragraphs, it will be obvious to every one that there is, and must necessarily be, an intimate relation between the activity of the Respiration and the consumption of oxygen during this process, on the one hand, and the activity of the Digestion and the introduction of carbonaceous and other matters into the blood, on the other. Unless this relation

be harmonious and equable, the state of the health will quickly proclaim that there is some disturbance in the balancing powers of the animal economy. If a sufficient supply of carbonaceous materials be not provided by the digestive process, while the consumption of oxygen in the lungs is large, there will be rapid emaciation of the body—in consequence of the absorption of every particle of fatty matter that it contains, to supply the demand for carbon that the absorbed oxygen is continually making for the formation of Carbonic Acid.

"On the other hand, if the supply of carbon furnished by the digestive function to the blood exceeds the proportion that is required to satisfy the demands of the oxygen consumed, then it will either accumulate under some form or another within the body, or it must be discharged from the system by some other way than by that of respiration.

"In the one case, there will be a deposit of fat in the cellular tissue; and in the other, an extra duty, so to speak, will be thrown upon the liver, and this organ becomes stimulated to secrete a larger quantity of bile than is necessary in a state of perfect health.

"It has been long known that the Biliary secretion abounds in carbonaceous matter; indeed many physiologists have regarded the liver as the great eliminator of carbon from the system. The fact is true, although the theory may not be quite correct. Certain however it is that, whenever the carbon in the system is not duly eliminated by the lungs, there is usually forthwith an increased action of the liver set up; and *vice versâ*. These two organs therefore, appear to act as balancing or compensation agents in the important process of discharging the carbonaceous matter out of the system; and thus it is that, when there is an undue amount of duty, so to speak, thrown upon one of these organs, the overacting viscus becomes more than usually subject to disease. In hot climates it is the liver, and in cold climates it is the lungs, that most frequently suffers. Are we not thus, by a very simple train of observation, led to perceive the importance of suiting the diet to the climate in which we reside? The practice of so many of the English, in the East and West Indies, of eating as much animal food under a tropical sun and in an attenuated atmosphere, as they were in the habit of doing in their own country, is well known to be a prolific cause of disease. A little attention to the simple suggestions of Nature herself—quite independently of the researches of the chemist and physiologist as to the *why* and the wherefore—might annually save many valuable lives."

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"The refrigeration of the body, from whatever cause this may proceed, is generally found to increase the desire for food. Mere exposure to the air in an open carriage or on the deck of a ship, although no active exercise be taken, whets and invigorates the appetite. With many people a large draught of cold water will produce a like effect, and with others the exercise of the lungs in singing, speaking aloud, &c. will do the same. In what manner does the impression of cold on the body produce an increase of appetite? Its action seems to be two-fold: in the first place, it tends to brace and stimulate the whole body, more especially the muscular and nervous systems; and, 2ndly, by carrying off the caloric of the body quickly, it no doubt promotes the combination of the oxygen absorbed by the lungs with the carbon existing in the blood. If then this combination take place more rapidly than usual, there will be a greater demand for a supply of fresh pabulum to compensate for the increased expenditure."

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"No one can reasonably dispute the influence of the nervous system on the function of Respiration, as well as on the muscular powers that move the chest. Without the agency of the nerves, the stomach and intestines cannot prepare the elements, that are destined to combine with the oxygen absorbed during every act of breathing; and thus it is that this very act of absorption itself must also speedily cease. If the *pons Varoli* in a living animal be cut, or if it be stunned by

a blow on the top of the head, it will continue to breathe for some time—indeed the breathing may be more rapid than it was before;—but the heat of the body rapidly becomes less and less, until life is extinct. Now what is the cause of this? It seems to be that, as the absorbed oxygen no longer meets with a due proportion of the substances (carbon and hydrogen) with which it is destined to combine in the blood, the combustion, so to speak, is arrested; and thus there is no longer any fresh generation of animal heat. . . . . As the section of the pneumo-gastric nerves causes a cessation of the contractions of the stomach, and of the secretion of the gastric juice, and thus puts an immediate stop to the process of Digestion, in like manner any palsy or excessive weakness of the nerves of the bowels is invariably followed by some disturbance in the act of Respiration. Those two functions are united together by the closest ties of sympathy; and therefore we cannot be surprised that a lesion of one function should be almost invariably followed by a lesion of the other."

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"Admitting that the existence of Magnetic and Electrical currents in the animal body may have some share in the development of the functions of its different organs, the ultimate cause or generating power of all these agencies is the transition of matter from one state of existence to another, during the process of ransformation of the elements of the food into oxygenised compounds: viz. carbonic acid and water—those, which do not undergo this process of slow and gradual combustion, being rejected from the body under the form of excrementitious matters . . . . . Now it is quite impossible that any given quantity of carbon or of hydrogen—whatever be the forms which they assume during this act of combination—can generate more caloric within an animal body, than is produced by the direct combustion of these elements in oxygen, or in atmospheric air. It is not indeed easy to determine with accuracy the amount of carbonic acid that is evolved from the lungs, or of the watery vapour that is exhaled not only from them, but also from the surface of the body. But perfect accuracy on this point could not assist us very materially in our physiological inquiries; nor does the want of it invalidate the general correctness of the conclusions which we have been endeavouring to establish."—*Annalen der Chemie, &c.*

M. RACIBORSKI ON MENSTRUATION.

This very intelligent and active physician of the French metropolis has, within the last few months, read a very elaborate memoir on this much discussed subject before the Royal Academy of Medicine. Like most French medical writings, this memoir is far too lengthy and circumstantial; a vast number of particulars of little or no interest, or which are well known to every tyro in the profession, being most unnecessarily introduced. The following summary, however, of the author's views will well repay the trouble of a perusal.

According to M. *Raciborski*, the Menstrual discharge is (we use his own words) "an epiphenomenon (accessory phenomenon) of an important function devolved upon the ovaries, viz: the successive formation and separation of the ova and Graafian vesicles." It is not therefore, as many physiologists imagine, a mere issue or secretion intended to relieve the system of an over-supply of blood in the unimpregnated state; nor yet, as has been supposed by others, an important crisis which Nature often employs to abridge the duration of various diseases, and the least derangement of which is apt to be followed by a constitutional disturbance.

Formed in the very first year of life, or even sometimes before the birth of the infant, the Graafian follicles are found to go on gradually increasing in size and number, until they ultimately arrive at their complete development. The period

of life at which this takes place, varies a good deal according to the vigour of the system, and the general hygienic conditions to which the body is exposed during the early years of life: it coincides in the human female with the appearance of the usual signs of puberty and with the first show of the catamenial discharge. Hence, whatever accelerates or retards the maturation of the Graafian follicles, is observed to accelerate or retard the phenomena in question.

Many medical men—erroneously attributing the many complaints, to which some girls are subject at the epoch of puberty, to the mere efforts of the system to bring on menstruation,—endeavour by a variety of means to cause a determination of blood to the sexual organs, with the view, as they imagine, to assist nature. The true cause of the very common unsuccess of such endeavours is what we have mentioned above, viz.: that the Catamenial secretion is not a mere independent discharge of blood to serve any particular purpose, but is in fact the result and consequence of a peculiar process which has gone before it.

Whenever the development of the Graafian follicles is not retarded by any latent cachectic condition of the system, they gradually increase in number and dimensions, while at the same time they approach nearer to the surface of the ovaries. About the period of puberty, we may sometimes count as many as between 30 and 40 in each ovary, and often not a few of them are distinctly visible through the external envelope of this organ.

From the researches of MM. *Coste*, *Carus*, *Valentin*, *Wagner* and others, it appears that the germ in the human female (as in the females of the lower animals) consists in the presence of an ovum, similar to what is found in the bird. This is a curious fact; for it shows that the law, which regulates the generation of animals, is alike in all. Now the sphere of this law, so to speak, will be most unexpectedly enlarged, if we can show that, in the females of all mammiferous animals, just as those of birds, fish, reptiles, &c. there is a spontaneous periodic discharge of ova, without the intervention or co-operation of the male sex. Our researches, we think, clearly establish the truth of this curious position.

At each menstrual epoch, a Graafian follicle forms a projection on the surface of the ovary, then becomes the seat of a hæmorrhage, and finally bursts and gives issue to the ovum which it contained.

The catamenial discharge appears to be the result of the sanguineous congestion in the generative organs, which accompanies the last stage of the development of the follicles.

Whenever we have occasion to examine the body of a female who has died very soon after the catamenia have been upon her, we may feel confident that we shall find traces in the ovaries of a 'ponte' (laying of eggs,) that has quite recently taken place.

Although M. *Negrier* had clearly foreseen that such must be the case, he was not able, for want of favourable cases, to demonstrate the perfect truth of this fact. None of the observations, which this eminent physician has published, affords any decisive refutation of the old opinion held by *Haller*, *Graaf*, &c., and which is still received in the schools,—viz. that a rupture of the follicles never takes place except during or after coition.

The females of all mammiferous animals are subject to a similar 'ponte' during the periods of rutting or heat. One or more of the follicles, according as the animal is uniparous or multiparous, then attain their maximum of development, and form a projection on the surface of the ovary. At length they become the seat of a hæmorrhage, are filled with blood, and finally burst and give issue to an ovum. These phenomena are best observed in the sow, in consequence of the position of its follicles, which exhibit the appearance, in some respects, of a cluster of grapes. By attentively examining the ovaries in this animal, we may easily form an idea of what becomes of the follicles, after the discharge of the ova, and how they shrink to such small dimensions soon after-

wards, as to be only indistinctly visible—no trace, perhaps, remaining except a minute yellowish or orange-coloured speck.

The escape of ova takes place spontaneously in the lower animals, as it does in the human female, without any intervention of the male. We have ascertained the perfect accuracy of this assertion in swine and in bitches, which had been kept apart from their mates during the whole period of rutting.

It is but justice to admit that *Vallisnieri*, *Malpighi*, and *Bertrandi* had, many years ago, remarked the spontaneous rupture of certain parts of the ovaries in different animals during this period. These physiologists, however, fell into the error of supposing that these bodies, which they called by the name of *corpora lutea*, or *corpora glandulosa*, were really distinct organs destined to bring the ova forward to maturation. Now it may be unhesitatingly maintained, that all that has at any time been said of the so-called *corpora lutea*, &c. is exclusively applicable to the Graafian follicles at a tolerably advanced stage of their formation.

Whether the rupture of the follicles and the subsequent escape of the ova take place spontaneously, or be the result of copulation, the appearances which they (the follicles) exhibit afterwards, are very much alike: this remark applies to the female of the human subject, as well as of the lower mammiferous animals. Indeed, there seem to be certain cases, where the venereal orgasm alone, during coition, is accompanied with a rupture of the follicles, without any previous preparation on the part of nature; but then, before the 'ponte' can take place, the follicles must pass through all the degrees, so to speak, which they usually undergo about the period of the spontaneous expulsion of the ova. The external envelope of the ovary is swollen, becomes the seat of a hæmorrhage, and afterwards the escape of the ovum takes place. We may observe this phenomenon in rabbits, which copulate at all seasons and do not wait for any particular period.

It thus appears that women, like the females of all the mammiferous animals, are subject to a spontaneous 'ponte,' which recurs at particular epochs—known in the case of the former as the menstrual, and in that of the latter as the rutting, periods. The process in question is evidently connected with the reproduction of the species. In the majority of animals, there cannot be a doubt on this point: for there are some females which will not allow the approach of the male, until they are prepared by nature for the 'ponte.' The human female must be placed intermediate between such animals as are subject to periodic rutting, and those which are capable of generating at all seasons. On the whole, however, she approaches more nearly to the first, than to the second, of these classes.

One result from our statistical researches—which were made with the greatest exactitude—is that, out of 100 pregnant women, not more than six or seven at most became so by sexual connexion at a tolerably distant period after menstruation. In most women, conception may be dated from either a few days before, or a few days after, the menstrual period.

It is well known that mule animals, female as well as male, are incapable of reproduction. What is the cause of this sterility? Most probably the absence of Graafian follicles in the ovaries of the former, and of spermatic animalculæ in the seminal fluid of the latter.—*L'Experience.*

ON THE ORIGIN OF MILITARY OPHTHALMIA.

A report upon the very instructive researches of Dr. *Caffe* on the Ophthalmia of armies, and especially on that which is still prevalent throughout Belgium, was recently read before the Historic Institute of France. The following extracts will be read with some interest.

"In examining the question, as to the origin of the ophthalmia in the Belgian army, it deserves especial notice that the disease was not known in it until the year 1814, when it made its appearance among the troops of the 7th battalion, posted at Gand. There cannot be a doubt on this point. Well then, the disease must either have been of indigenous development, or it must have been imported somehow into the country. All testimony is against the first, and in favour of the second of these suppositions. The old soldiers, who formed, as it were, the nucleus of this battalion, had contracted the disease while they served in the French Army. It was from them that it was communicated to the young recruits.

"Admitting, then, the truth of the fact, that the Belgian army derived the disease from the French army, how shall we explain its first introduction into the latter? All the best authorities trace this to the memorable campaign of our troops in Egypt. This country—which seems to have the dismal prerogative of engendering most of the pestilences which have desolated the world—has an atmosphere so loaded with saline particles,* that we cannot wonder much that the eyes of the inhabitants are almost continually suffering; more especially when, to this source of irritation, we have to add the dazzling reflection of the sun's rays from the plains of sand everywhere—the true cause, by-the-bye, of that singular phenomenon, the *mirage*.

"Then, too, the winds from the desert—so well known by the poetic appellations of Simoom and Samiel—are so utterly desiccative, that the ground becomes dry almost the very moment after it has been watered, and all vegetation is quickly withered up.

"While these winds blow, the skin feels quite harsh and crisped up, and the whole system is in a state of feverish excitement; the eye, as a matter of course, must suffer in an especial degree. We cannot, therefore, be surprised at the extreme frequency and severity of Ophthalmia in Egypt. The constantly increasing number of miserably blind creatures in that country forms one of the greatest drawbacks to its national prosperity.

"This seems, indeed, to have been the case from the earliest times. *Herodotus* tells us that *Cyrus* sent a deputation into Egypt to obtain the assistance of a skilful oculist; and we read that *Cambyses'* army, after crossing one of the sandy deserts, returned to their own country in the most miserable plight, in consequence of so many of the poor soldiers having become blind and otherwise diseased. Many of the troops in *Alexander's* army, that invaded Egypt, suffered terribly in their eyes; and so great was the discontent at one time among his soldiers, that there was every prospect of a general mutiny. The Roman armies, too, had a great aversion to military service in this part of the world. In early French history, we meet with several notices to the same effect. During the reign of Louis IX. many soldiers, who had accompanied an expedition into Egypt, returned either quite blind, or suffering with diseased eyes. It is scarcely necessary to allude to the results, in this respect, of our last expedition under the modern Alexander—who has not however left a city behind him, to proclaim the glory of his name. But as no epidemic ophthalmia had been known in the French army from the time of St. Louis down to the close of last century, the disease, when it was brought back by Bonaparte's troops to France, was regarded as quite novel and unknown in medical history. So severely did our

* "The salt is so abundant, that every pit that is dug becomes filled with a saltish water: this is found to be owing to the presence of marine salt, natron, and a little nitre. The surface of the ground, that has been well watered, is often observed to be quite crusted over with a deposit of salt. The natron is formed in great abundance in the different lakes, and large quantities are collected along the track of the Isthmus of Suez."

poor soldiers suffer, that in Desaix's corps, at El. Lacum, there were not fewer than 800 threatened with complete blindness. During the whole period of occupation, the army suffered terribly from the epidemic. Every now and then it would seem to be disappearing; but again and again it broke forth with as much severity as ever. At length it yielded (or seemed to do so) to an epidemic dysentery;—the irritation of the bowels acting as a potent revulsive to that of the organs of vision.

"Let us briefly follow the course of our troops from the time when they left Egypt, in October, 1801, until they landed at Toulon and Marseilles.

"Of the whole French fleet, which sailed for Egypt under Admiral *Brueis*, only two line-of-battle ships (the Guillaume Tell and the Genereux,) and two frigates (the Justice and the Diana) escaped after the battle of Aboukir. These vessels, under the command of Admiral *Villeneuve*, reached Malta. A part of the fleet was burned, destroyed, or carried as prizes to Sicily by *Nelson*. A number of smaller craft remained at a distance from the scene of action, and escaped at first; but most of them were afterwards captured by the English. One vessel, with 150 wounded and blind on board, reached the shore of Sicily; but the whole crew was barbarously murdered by the inhabitants. The transport, that had *Junot*, *Rigel*, *Lallemand*, &c., on board, was taken by the enemy's cruisers; while that in which many of the other chief officers had embarked, was driven on shore in the Gulf of Tarentum. In short, with the exception of the squadron which, under the command of *Gantheaume*, eluded the vigilance of the British, and at length landed Napoleon at Frejus, in 1800, and of the Lodi which carried General Leclerc to St. Domingo, nothing remained of that fine fleet that, two years before, had carried Cæsar and his fortunes to the East. The rest of our navy subsequently disappeared at Trafalgar, in 1805, and at Cadiz in 1808.

"It is evident, therefore, that it was not the French fleet which could have imported the Egyptian ophthalmia; seeing that the fleet itself was destroyed in the East, and its poor remnant went to the West Indies, there to perish of the yellow fever. (The justness of this conclusion is not at all so obvious to us as it seems to be to the writer.) Let us now follow the course of the troops, and see whether we can thus obtain any light upon the subject.

"Just before the capitulation of the army, the Ophthalmia (as already mentioned,) which had shortly before broke out with great severity, had begun to abate under the influence of a scorbutic dysentery. Still there were very many of the soldiers grievously affected with it, when they embarked on board the British flotilla. Ultimately they were all landed at Marseilles. The troops, which a twelvemonth before had arrived with Bonaparte at Frejus, had unquestionably first brought over the germs of the disease, as a good many of the men (belonging to the small division that was known as the Hussars of Argento) were suffering from it at the time of their debarkation. Part of these were incorporated with the corps of the Mamelukes, and with them stationed at Melun—where the disease was not long of breaking out with violence among the young recruits. About the same time, the troops that had formed the garrison of Cairo, under the command of Belliard, returned to France in British transports; and *Samuel Cooper* tells us that, happening to be at Marseilles in the year 1802, he himself saw many of the French soldiers affected with the ophthalmia, which they had brought with them from Egypt.

"It was by the sick on board the first English transport after the capitulation of Alexandria, and by the hussars of Argento, and the garrison of Cairo—these brave fellows becoming gradually dispersed over almost every part of Europe—that the infection was introduced into France, Italy, Holland, Germany, and Belgium. The latter country alone retains in the present day this ill-starred gift of the conquerors of the Pyramids to the Grand Army. Such is the origin

of the Belgian ophthalmia—a living branch, so to speak, of a poison tree that grows in the plains of Egypt."

At the same time we must admit that it is far from easy to explain satisfactorily why the disease should of late years have been confined to one country only of Europe, while others, that were originally infected, are now quite exempt from it. How far the following explanation will suffice, may seem doubtful; but it deserves notice. "If we except the Mamelukes, who formed a distinct corps to the close of the Empire, all the regiments of the Egyptian army were dissolved, and their men incorporated with other regiments that eventually became dispersed over almost every country in Europe. Engaged in incessant marchings or constantly renewed combats, one day encamped in one place and next day in another, they seldom remained for any considerable time in barracks. Now it has been proved that the frequent change of air, and not crowding the sick too much together, are two of the most efficient means to check the progress of military ophthalmia. The disease was thus restricted to the actually existing cases, and was scarcely at all communicated to others. In consequence of this, fresh cases were of rare occurrence, and the extent of the mischief was gradually becoming more and more contracted. As a matter of course, the greater number of the poor fellows who were afflicted with it, were killed in some one of the murderous battles that were every now and then fought. Thus it was that, in 1814 and 1815, when France was over-run with hostile armies, not above a very few hundred cases were to be found in all the hospitals put together. The foreign soldiers in the French army being then sent back to their respective countries, it so happened that a battalion, that had been formed at Gand, in 1814, received into its ranks a good many men that were affected at the time with ophthalmia. From this *focus*, at first of a very limited extent, there was gradually diffused the baleful evil, which has ultimately extended itself to the entire Belgian army.

"Such is the opinion which we have formed upon the subject; and we may therefore sum up our observations by saying that the ophthalmia of armies,—the offspring of that ophthalmia which from time immemorial has been known to prevail in Egypt, after afflicting every country in Europe (England not excepted)—has remained contagious and epidemic in Belgium alone, where a single exceptional circumstance has caused it to survive, while in every other country it has become extinct and unknown."—*L'Examinateur Medical.*

M. Rayer on Typhus in the Lower Animals.

How far the following communication, from the pen of this eminent physician, may prove satisfactory to the majority of readers on this side of the Channel, we shall not take upon ourselves just now to decide, but append a few remarks at the close of it. It was sent to the Royal Academy of Medicine in the form of a letter addressed to the secretary.

"For the last twenty years, the subject of *entero-mesenteric* or *typhoid* fever has excited the most lively attention among the medical men of all countries. We cannot be much surprised at this when we consider the very great frequency, and the, alas! too common danger, of the disease.

"The comparative study of man and of the lower animals naturally leads us to inquire if a malady, that is of such frequent occurrence in the former, is ever met with in the latter, and to ask ourselves whether the silence of veterinary writers on the subject is to be regarded as a sufficient warrant to negative this proposition, or merely as shewing that the intestinal lesion, which constitutes the most positive anatomical character of this disease, may have hitherto been overlooked in the case of the lower animals, just as it was in the human subject, before the researches of MM. *Petit* and *Serres* came to be generally known.

"I was in a state of uncertainty, when chance presented to my notice, a few days ago, a most favourable opportunity of witnessing a case which has had the effect of leaving no doubt on my mind that Entero-mesenteric Fever does actually occur in certain of the solipedous animals.

"A donkey, about six weeks old, died after having been affected with a severe diarrhœa for about eight days. It was brought to my laboratory; and on examining the body, I could find no traces of disease anywhere, save and except those very lesions which we meet with in a human being that has died during the first stage of typhoid fever. I have now the honour to submit to the inspection of the Academy a faithful representation of the vascular injection observed in the small intestine, cæcum, and commencement of the colon.

"I may here mention that the Peyerian glands in this animal are naturally much developed; but their appearance is very different from what was found in the specimen that is now exhibited. For here not only do they project considerably upon the internal surface of the gut, but several of them present a decidedly red colour, while around others the mucous membrane itself is more or less highly congested. One of the groups was ulcerated about its centre; but most of them were merely puffy and tumefied. The mucous lining of the small gut was of a reddish colour throughout: this appearance was most conspicuous in the jejunum and upper part of the ileum. The entire length of this intestine was filled with a dirty-looking grey or reddish-coloured fluid. There was no appearance, in any part either of the small or large bowels, of the plastic lymph which is generally observed in cases of genuine dysentery. The mesenteric glands were swollen, and several of them were so highly injected with blood as to have a red colour; others had only a rosy hue, with numerous dark striæ on their surface. The anatomical appearances therefore in the ileum and mesenteric glands were clearly such as are observed in the bodies of those who die in the first stage of typhoid fever. The same thing may be said of those presented by the cæcum; for the lining membrane of this gut also was of a lively red colour, and looked as if it were covered with a considerable eruption of papulæ, attributable to the increased development of the isolated crypts of this bowel. .. .. The pyloric extremity of the stomach exhibited a large patch of ecchymosis; the spleen, liver, kidneys, and bladder were sound; so likewise were the lungs, heart, brain, &c.

"We thus perceive that in this animal, which died of an acute disease chiefly characterised by the existence of diarrhœa, the only morbid appearances witnessed on dissection were an increased development of the Peyerian glands, ulceration of one group of them, a general enlargement of the solitary glands of the large intestine, redness of the mucous membrane of all the bowels, tumefaction of the mesenteric glands, and the presence of a sanguineous fluid in several parts of the small intestine—an *ensemble* of lesions, which, as far as we know, has not its analogue, except in those which characterise typhoid fever in man."

Such is the case adduced to prove the existence of typhus in the lower animals: now for the learned reflections of the accomplished narrator.

"I must however admit that the question, as to the existence of this fever in the lower animals, is not completely solved by a single fact; but the present instance may probably suffice to draw the attention of veterinary practitioners to the subject, and lead them to examine, more minutely than than they have hitherto done, the state of the intestinal mucous glands in the serous and sanguinolent diarrhœa which is so common in the young of our domestic animals.

"The allusions to the state of these glands in veterinary writings are but few, and very far from satisfactory. In the numerous works which have at different times been published on the *typhoid affections of cattle*, we find the authors insisting much on the diffused and ecchymotic redness of the intestines, the swelling and softened condition of the spleen, occasionally the softening of the lungs

also, the alteration of the blood—morbid states which are tolerably common in certain forms of Typhoid fever. But little or no notice is made of any lesions of the intestinal and mesenteric glands—the very lesions to which so much importance is attached in human pathology."—*Gazette Medicale.*

Remarks.—It is certainly not from any importance in the contents of the preceding note that we are induced to append a few observations of our own, but rather from our surprise that so distinguished a physician as M. *Rayer* should have given expression to such statements as we find in it.

That a man of his experience and research should deem it worth his while to address a formal letter to the leading medical association in his country, in order that he might convey to its learned members the important intelligence that he had found the mucous and mesenteric glands somewhat red and swollen in a young ass which had been affected with diarrhœa, seems to us most passing strange! And then too the extraordinary inference which he draws from this interesting discovery:—what is it?—nothing more nor less than that this one fact affords a strong and very reasonable presumption that Typhoid fever may affect the lower animals as well as man!

Some of our readers may say that they do not perceive the *sequitur* in this important proposition. If so, we take the liberty of telling them that their blindness proceeds not so much from the darkness or uncertainty of the problem itself, as from the dulness of their own minds. Do they not know that it is an undisputed (at least by the majority of the French physicians) axiom in pathology, that typhoid fever is a certain morbid state of the intestinal and mesenteric glands? and is it not therefore as clear as noon-day that the converse of the axiom must also be true, viz. that this said morbid state of the bowels is typhoid fever? Let them observe for a moment how this simple syllogism explains and illustrates much that is otherwise obscure in pathology. For example, the blood is well known to be fluid after death from lightning; so it is also in many cases of fatal poisoning; as well as in putrid fevers; in pestilential cholera, &c. Here then is a feature common to all these morbid states. Is not the inference then quite transparent, that they are all identical in their nature, or at least that they all belong to the same family? Such we think to be a fair parallel to the case adduced by M. *Rayer*, and the reasoning which he has founded upon it.

That the mucous membrane and glands of the intestines should exhibit some traces of irritation or even of inflammatory action after a protracted diarrhœa, is, one might suppose, an almost necessary consequence.* Is not the conjunctiva usually swollen and reddened after much weeping? and is not the urethra similarly affected when it has been irritated and inflamed? But it is unnecessary to pursue this subject, as it is not likely that any British physician will be biassed by such shallow analogies as our author has employed on the present occasion. What we chiefly regret is to see, that some of the very leading men in France, at the present day, are still so very far from the very threshold of a safe and truly

* Perhaps many of our readers will remember that not a few of the leading men in Paris, including *Dupuytren*, at the time of the invasion of the Asiatic cholera, came to the important pathological conclusion that the seat and proximate cause of this formidable stranger disease were an hypertrophied and (occasionally also) an ulcerated state of the Peyerian and Brunnerian glands of the intestines! Their favourite remedy, if we remember aright, was the acetate of lead—which, it was alleged, acted as a direct soothing and antiphlogistic sedative! The patients died, as a matter of course; the *post-mortem* was always most elaborately performed, and the appearances found on dissection were, we need scarcely add, in strict accordance with the doctrine in question!! So much for medical science in the nineteenth century.

scientific pathology. How can it be otherwise when they allow their minds to be so blinded and misled by preconceived opinions? The last paragraph in M. *Rayer's* remarks affords a striking example of this. He tells us that Veterinary writers have often observed in the bodies of animals, that have died of typhoid affections, a softened state of several of the viscera and various abnormal conditions of the blood; but that they have not noticed any lesion of the mucous glands of the intestines. The inference, that we should be inclined to draw from such a statement, is that the former phenomena are in fact the pathognomonic anatomical characters of the disease—a statement quite in accordance with what we find in the bodies of those who die of malignant fevers. M. *Rayer* however, seems to take a different view of the case; for, without overlooking these phenomena altogether, he considers them as of very subordinate importance, in an ætiological point of view, to the altered condition of the mucous glands.—*Rev.*

ON THE COINCIDENCE AND ANTAGONISM OF CERTAIN DISEASES.

We have already, in the present number, made one or two allusions to this subject, which for some time past has been one of the favourite themes of discussion among the *Savans* of the French Academy. M. *Boudin*, (who was for some years with the army in Algeria and is now physician of the Military Hospital at Versailles,) is one of the most active supporters of the new doctrine of antagonism of diseases,—so far at least as regards the mutual repulsion of marsh fevers on the one hand, and of typhus and pulmonary consumption on the other; and hence, as we are told, wherever the first are very prevalent, the latter are kept in abeyance, and *vice versa*. This gentleman has written a long letter (apparently in reply to some strictures that had been made on his former observations) on the subject: from it we select the following somewhat *grandiloquent* extracts.

"Whenever a novel truth makes its appearance on the horizon of science, there arises almost immediately against it a host of opponents—men on whose banner cannot always be inscribed as a motto 'the love of truth.'

"If it be the destiny of every truth to require, like the fruits of the earth, a certain period of time before it can be matured, there are at the same time in man's heart two instinctive feelings which tend to secure the necessary proof or testing, so to speak, of this evolution. The first of these is the AMOUR-PROPRE of certain persons which leads them to deny every thing that is out of the usual course of received opinions; and the other is the *inertia* of the crowd, who are so apt, at once and without reflection, to accept the bold asseverations which an inexorable routine is ever ready to oppose to the progress of true knowledge. When a man of a certain amount of talent allows his mind to be impregnated with any error, it is rare that he does not succeed in environing it with a host of arguments, which, in the eyes of the multitude, constitute a satisfactory demonstration of its truth.

"It is little more than two months ago since a man, who holds a high place in the hierarchy of science (M. *Rayer*) suggested to the Academy to institute some inquiries as to the relative frequency of phthisis in marshy countries—a question mooted in my Treatise on Marsh Fevers, and subsequently developed at greater length in my Essay on Medical Geography.

"By adopting with acclamation this important suggestion, the Academy paid a solemn homage to the value of these opinions; but this very act was no sooner known than it became the signal for an outburst of violent opposition—which however has had no other effect but that of more firmly establishing the truth of the proposition in question.

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"It was at first the Strasbourg school, that represented itself as refractory to the law of Antagonism. But it was no difficult task for me to demonstrate that the physicians there confounded the diseases of the marshy districts of Alsatia with those of the non-marshy districts; the diseases of the city, properly so called, of Strasbourg with those of its environs, including the citadel and other buildings; and lastly, the diseases that are truly and legitimately called endemic with those that are merely accidental or imported. I likewise pointed out the vague assertions and the utterly unsatisfactory and fallacious reasoning that were used by these gentlemen.

"The next adversary that presented himself was M. *Fourcault*, who pretended that I had far too much overlooked the agency of the mere moisture or dampness of places, as a potent cause in inducing various diseases. But if he had read with due attention what I have written on the subject, he must have seen that I have enumerated many facts to prove that the circumstance of humidity alone will not at all account for the immunity of certain places from phthisis and typhoid fever. At *Brest*, for example, which is damp but not marshy, we find that one out of every four of the convicts there die of pulmonary consumption; whereas at *Rochefort*, which is marshy as well as damp, the mortality from this disease does not exceed one in thirty-six.

"We are rejoiced to find that, with the view of investigating this subject, the Academy of Medicine at Athens, has proposed as a subject of discussion at the approaching *Concours* the question, 'What is the amount of influence which the marshy districts of the country have on the development of tuberculous disease?'"

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"Two centuries ago, intermittent fever was rife in London and its neighbourhood: James I. and Cromwell are reported to have died from it. Now-a-days the disease is scarcely at all known there; while phthisis and typhoid fever have unquestionably become greatly more frequent and destructive.

"Since the drying of an extensive marsh between the lakes of Zurich and Wallenstedt in Switzerland, ague has disappeared from the surrounding country: but, alas! consumption has become much more common in consequence. A similar pathological transformation is reported to have taken place in New-York within the present century.

"To recur once more to Strasbourg, let us hear what M. *Forget* (who has very zealously impugned the new doctrine of antagonism) says of his practice, as it is from the data, obtained from this, that he deduces his main argument. 'At my clinique in the hospital, I have had 269 cases of typhoid fever and 230 of phthisis: the latter figure is indeed much below the actual number, as we do not admit any cases of pulmonary consumption into the wards, except when the disease is in its first stage.' Now even in this statement there is a confirmation of our doctrine that the two diseases, here named, are usually indigenous in one and the same place. M. *Forget* proceeds to say: 'In the course of these six years and four months, I have had 335 cases of intermittent fever, or very nearly one case during every week.' From this circumstance, the Professor infers that ague is very prevalent in Alsatia. We should have arrived at the very opposite conclusion. That there should be only one patient affected with intermittent fever, a week, in the hospital of a city, which contains 70,000 inhabitants, appears to us a pretty strong argument that the disease is of rare occurrence, and is certainly not endemic there. Besides, as we have already said, no person can judge of the diseases of the environs of Strasbourg, and of the surrounding country, by those of the city itself. We should also remember that the statistics of a single hospital are often apt to mislead us as to the prevailing diseases in any great town.

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"In the military hospital at Marseilles, we very often find that the entire number of the cases of typhoid fever are supplied by one regiment of the gar-

rison, while another regiment which may have arrived, it may be, from Corsica or Africa, shews itself quite refractory to this disease, and gives birth to those diseases only which have been endemic in the countries, where the troops have been residing. Here, then, we have an instance of a *hospital Coincidence*, but of a *geographical antagonism*, of different morbid conditions.

"At Strasbourg, on the other hand, there are never any arrivals from Corsica or Africa; but there is, as in all large towns, a floating population, whose former residence ought always to be well investigated by the philosophic physician, to enable him to treat their diseases with success. He must also not forget to take into his consideration the very important circumstance, that many of the inmates of its hospital are the inhabitants, not of the city itself, but of the surrounding country—whose prevailing diseases may be very different from each other. Here is an instance in point.

"The 60th regiment, which came from the Citadel of Strasbourg two months ago, has been obliged to leave a number of its men affected with ague along the whole line of its march; and we have still numerous cases sent to us at Versailles, while the prevailing disorders there are thoracic affections. Now if this regiment had sent its sick to the hospitals in Paris, we should then have had numerous examples of an alleged coincidence of ague with the usual diseases of the metropolis—in other words, we should have had an example of *hospital*, but not of *Endemic, Coincidence*."—*Gazette Medicale.*

Remarks.—Like every other novelty in medical doctrine, that is brought forward in the present day, this alleged *law of Antagonism* between marsh fevers on the one hand, and Phthisis and Typhus on the other, will doubtless be pushed to an extravagant length for some time, and then it will be apt to be entirely neglected. In all ages, physicians must have observed that certain systemic diseases are rarely found to prevail simultaneously in any place. Influenza and genuine Typhus are seldom found to exist together; and it has often been noticed that the invasion of one exanthem suspends, or entirely arrests, the activity and prevalence of another. But this remark, it may be said, applies to *Epidemic* rather than to *Endemic* diseases. True; but most probably the law, that holds true in the one case, is equally applicable to the other.

That pulmonary consumption is not so prevalent in marshy agueish districts, as in those of a different formation, we are ready to admit to a certain extent; and perhaps for this very simple reason, that such localities are not exposed to these very vicissitudes of temperature which are, it is well known, the usually exciting cause of all chest complaints.

But can we say the same as to any antagonism or repulsion between Ague and Typhus fever?—it seems more than doubtful.

Are not the two diseases frequently blended, as it were, together in such places as New Orleans, Sierra Leone, and the banks of the Ganges? for what is the character of the destructive pestilences of these places but that of a malignant remittent fever—a disease intermediate between genuine continued and intermittent fevers, and partaking of the characters of both?

M. *Boudin* says that, since the disappearance of Ague in London, the frequency of Typhus and Phthisis have greatly increased in the metropolis; but then have we not good reason for believing, from the writings of Sydenham, that in his day, grave continued fevers were quite as common, and indeed more so, than they are now? We suggest these circumstances, not so much with the view of denying the truth of M. *Boudin's* doctrine, as in the hope of guarding him and others from carrying it to an extravagant and erroneous extent.—(*Rev.*)

M. RACIBORSKI ON PURULENT INFECTION.

"M. *Bonnet*, chief surgeon of the Hôtel Dieu at Lyons, has recently directed the attention of the profession to the good effects of cauterising—either with the actual or the potential cautery—ulcers and suppurating wounds, with the view of preventing or even of curing that very formidable affection which has been called purulent Phlebitis and purulent Infection. It appears to me that a temperate discussion of this question is calculated to throw some light on several topics in Pathology, that are a good deal canvassed in the present day.

"In my thesis, published in 1840, I examined with much care the various theories (of metastasis, absorption, aspiration, phlebitis, &c.) which have been proposed by different writers, to account for the formation of those internal abscesses or purulent deposits, and the occurrence of the other morbid affections, which not unfrequently accompany open wounds in a state of suppuration, and it then, as I stated at the time, seemed to me that none of them was satisfactary in an ætiological point of view. We can at present allude to the last only of these theories, and shall now very briefly state our reasons for refusing our assent to it.

"The doctrine of phlebitis reposes on the assumption that there is a passage of the pus—secreted by the inner surface of the veins in a state of inflammation, after operations, injuries, accouchements, &c.—into the current of the circulation. But it is very far from being proved that such a passage or transmission ever takes place. On the contrary, it would seem, from the researches of most pathologists in the present day, that the first phenomenon in actual phlebitis is the formation of a coagulum that plugs up the inflamed vessel, and which thus detaches the diseased from the healthy portion of the tube. In such a state of things, it is obvious that any purulent matter, which may be secreted in the former part, cannot become mixed with the general mass of the blood. M. *Dance* himself had felt the force of this objection so much, that, in order that he might be able to give some degree of consistency to his *ingenious romance*, (to use the expression of M. *Tessier*, to whom unquestionably belongs the merit of having first clearly established the importance of this point,) he was obliged to suppose that the secretion of pus takes place before the formation of the coagulum—a position at utter discordance with the observations of all the best pathologists. But, by a curious contradiction, when he was describing the symptoms of phlebitis, he enumerated in the last stage those which he considered to be owing to the passage of purulent matter into the blood. If space permitted, we might adduce other arguments that are unquestionably opposed to the doctrine that the symptoms, of what has of late years been called Purulent Infection of the system, are attributable to a suppurative inflammation of the veins."

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"M. *Bonnet* seems to be one of those surgeons who attribute the constitutional disorders, which occasionally attend suppurating wounds, in part to an inflamed state of the veins, and in part, also, to the direct absorption of purulent matter into the system. But neither of these doctrines can well serve his purpose, when he attempts to give a reason for the successful results of cauterising the wounds themselves, or the adjacent veins, as a means of counteracting these disagreeable consequences.

"May not the following theory—derived from the study of *Liebig's* beautiful researches—furnish a better explanation of the subject in question?

"It is well known to the chemist, that, if a small portion of yeast be placed in contact with a solution of sugar, the latter substance begins immediately to undergo certain changes, the result of which is the formation of alcohol and carbonic acid—and yet the yeast itself has lost nothing of its weight. May not something akin to this take place, when a portion of purulent matter, in a state

of decomposition is brought into mere contact with the blood? and may not the entire mass of the circulating fluids in this manner undergo a certain change, as we daily see take place in the fermentation of large quantities of vegetable juices, when the minutest quantity of leaven is added to them?

"If we examine attentively the cases, in which the symptoms of *purulent infection*, or *purulent diathesis* appear, we shall find that these symptoms have almost always occurred under circumstances that are favourable to the decomposition of the secreted pus: indeed, the physical characters, as well as the chemical properties, of the purulent fluid abundantly prove the truth of this observation.

"The pus, having become vitiated—whether this has been from neglect of cleanliness in dressing the wound, or from the mere influence of an unwholesome atmosphere that may, perhaps, be charged with molecules in a state of putrefaction, or from the mere influence of an elevated temperature—communicates the movement of its decomposition to the coagulum which stops up the extremity, and thence to all the mass of the blood."

* * * * * *

"It has usually been too much the case with pathologists to ascribe the alterations, which are met with in the veins of those who have died from suppurating wounds, to an inflammation of the parietes of those vessels. But I am persuaded that, in very many cases of this sort, the pus, that is found in the interior of the affected veins, is no more the direct consequence or result of a phlebitis, than is the deep red colour of their lining membrane, so frequently seen in fatal cases of typhus fever.

"In support of this opinion, I might allude to the accidents which are apt to follow dissection-wounds. In these cases all the phenomena, from the earliest local symptoms observed during life, to the most serious anatomical lesions discoverable after death, might seem to justify the appellation of Phlebitis,—which has been usually applied to this state;—and yet what is more manifest than that there is a primary alteration of the blood, under the influence of a fluid in the state of decomposition? Does not the success, which generally attends the immediate cauterisation of the wound in such cases, abundantly prove that it is to the destruction of the poisonous matter by the caustic employed, and not to the action of this on the parietes of the veins, that the curative effects are really attributable?

"It is in this manner that we should explain, I think, the cures obtained by M. *Bonnet* from cauterising wounds in a state of suppuration; and I am, at the same time, led to believe that, if we were to combine this practice with irrigations of cold water—so as to establish, as it were, a continual current of water around the solution of continuity—we might obtain most salutary results, and prevent many of those distressing and fatal accidents which too frequently supervene after severe accidents and operations."—*Archives de Medécine.*

MISCELLANEOUS NOTICES.

1. *Notice of a new Danish Medical Journal.*

We have received the first number of the Bibliothek for Læger, edited by *Professor Otto* of Copenhagen, and published during the present year in that city. Its chief contents are—1. A paper on Phthisis and its treatment, with remarks on the use of Dr. *Ramadge's* inhaling apparatus. (The writer judges favourably of this mode of treatment! so much for his sagacity and judgment. We advise the doctor near Holborn to send a cargo of his little pipes forthwith to Copenhagen, addressed to the care of Dr. *Giersing*.) 2. Remarks on the most celebrated physicians of the French metropolis, and their characteristic methods of treatment. 3. A case of remarkable deformity of the male genital organs, by

Professor *Svitzer*. 4. On the advantage of silk ligatures by the same, &c., and also numerous clinical reports from the civil and military hospitals of Denmark. As we know nothing of the Danish language, we cannot do more than merely thank Professor Otto for his polite kindness in sending us the first number of his new periodical, and express our cordial good wishes for its fame and success.

2. *Successor of Larrey in the Institute.*

The medical world in Paris had been, for some months before the day of election, in quite a buzz of expectation and *quidnunc-ery*, as to who should prove the fortunate candidate for the vacant place of the famous *Larrey*. The distinguished Professor of Montpelier, M. *Lallemand*, was the favourite, it was generally believed; and this idea was confirmed on finding that the committee, whose part it was to select a certain number of names out of the host of candidates, had placed him at the top of their list. The others followed thus: *Lisfranc*, *Ribes*, *Velpeau and Gerdy* (equal,) *Amussat*, *Begin*, and *Jobert*. The indefatigable surgeon of La Charité, however, although only fourth on the list, proved at last to be the successful competitor. The French Journal, *l'Experience*, approves highly of the choice, and concludes its notice of the election with these words: "M. *Velpeau*, in point of professional fame, is one of the reigning princes of surgery. His works on operative surgery and topographic anatomy are known everywhere. He possesses in the highest degree a love for his art. His intellectual character is eminently progressive; if he errs in this respect, it is rather in the way of *too much* than of *too little*. His whole career has been one of labour and study; and no one has better proved by example the truth of the adage—

'Labor improbus omnia vincit.'"

(This *eloge*, we believe, is nothing more than true.)

M. *Lisfranc* does not fare so well. Some of the French journals are having a fling at him, for a very notable piece of puffery with which he is charged. It seems that the wealthy Marquis d'Aligre recently had the misfortune of breaking the neck of one of his thigh bones, and that M. *Lisfranc* was called in to attend him. This was all duly announced in the public journals, as a matter of course, at the time of the accident; and the profession naturally thought that there was an end of the matter, at least between the public and the doctor. Not so, however; for we are told that many of the leading fashionables in Paris had the honour of receiving, some weeks after the accident, the following 'jolie petite lettre, fort coquettement lithographiée:'—

"The apparatus was yesterday removed from the limb of M. le Marquis d'*Aligre*. The fracture has healed, without any shortening of the member. From this time the Marquis enters upon convalescence; he will soon be able to walk; his general health is excellent.

(Signed) *Lisfranc. Nauche.*"

Paris, 23d February, 1843.

3. *Transmission of Glanders by the Blood.*

M. *Renaut* recently exhibited to the Academy some morbid preparations illustrative of the effects of this disease, where it had been communicated by injecting into the veins of a healthy animal some of the blood taken from a glandered one. This fact, however, is not a new one; as *Blaine*, in his work on the veterinary art, expressly tells that when Mr. *Coleman*, on one occasion, bled an ass till it fainted, and then injected an equal quantity of blood drawn from the carotid artery of a horse affected with the glanders, the former animal exhibited in the course of a few days all the symptoms of the disease—a fact that was fully proved by the circumstance that the glanderous matter taken from it and inoculated upon another ass produced the usual effects of direct infection in this last.

Vibourg also, in his treatise on the Glanders and Farcy, has the following re-

mark :—" Experiments have clearly shown that the mass of the circulating fluid is really charged with the poisonous matter, and that, if glanderous blood is injected into the body of a healthy animal, the latter will become infected with the disease."

4. *Decadence of a brilliant Operation!*

How, in the name of all that is wonderful, comes it that we never hear now of dividing people's tongues—or, as we heard an elocution professor once tell a public audience, of cutting people's throats—for the cure of stammering? This great achievement of modern surgery has lasted just about as long as a fashionable novel usually does: before a twelvemonth has expired, it is not even talked of. Last year the weekly periodicals teemed with cases of wonderful cures effected "slick off in a twinkling;" and now, alas! there is an utter dearth of any thing that excites curiosity. By mere accident we noticed the heading of an article in a late number of the Annales de la Chirurgie—by-the-bye, one of the best of the French journals—on the treatment of stammering by dividing the genioglossi, and we were curious enough to see what the author would now say upon the defunct subject. With most praiseworthy candour, he tells his readers that, although he met with very decided success in some cases, the result of the operation in his practice, on the whole, was so unsatisfactory that for the last eight months he had entirely given it up. The editor of the journal, in a foot-note, remarks: "It is this conclusion alone that has induced us to insert the memoir of M. *Cloesser*, for it is more remarkable for its good faith, than for any importance of its statements."

5. *Iodine Injections in Hydrocele.*

The use of the tincture of iodine, more or less diluted, in cases of hydrocele as an injection, in lieu of wine, &c., is becoming more and more generally adopted by the French surgeons. M. *Velpeau* has recently written a long memoir, strongly recommending it; and we observe that M. *Pasquier*, surgeon of the Hôtel des Invalides in Paris, reports most favourably of its effects. It seldom produces much pain, even when the injection is strong; and, according to the experience of several surgeons, it seldom or never fails in producing the wished-for adhesive inflammation.

The action of the tincture of iodine on the skin appears to be very similar to that of a strong solution of the nitrate of silver; it stimulates the part for a short time, and then soothes irritation and pain. We have seen good effects from applying it daily to the integuments covering scrofulous and other indolent abscesses. Recently it has been recommended as very useful in strumous, and other kinds, of, ophthalmia, when applied on the outside of the eyelids. It seems to act as a gentle counter-irritant or derivative, in the same manner as the nitrate of silver does.

6. *Affectations of would-be 'Savans.'*

A short time ago there was a long and unmeaning article by M. *Guerin*, in the Gazette Medicale, of which he is the 'redacteur en chef,' with this extraordinary heading—"of the scientific unity and solidarity (!) of anatomy, physiology, pathology and therapeutics, in the study of the phenomena of the animal organism." We have rarely met with such a tissue of pompous absurdity—it possesses the rare union of German unintelligibility and French verbosity. As a matter of course, the 'refrain' of the whole is something about muscular retraction, deformities, and subcutaneous section of muscles, &c. A brick will suffice as a sample of the building: "The anatomy of ages has shown me that, from early fœtal to adult life, the fibrosity of muscles in all animals alike goes on incessantly increasing, in relation to the fleshy constitution, that is to say in the ratio of the antiquity and the intensity of action of the cause." Reader, can'st

thou tell us poor mortals what lingo this is; for we frankly confess that we do not understand one word of it? Surely this is the "darkening counsel by words without knowledge," that the wise Man of old hath so well exposed.

7. *Sulphate of Iron in Agues.*

In 1808, there was a great deal of intermittent fever in the low districts of Paris. The supply of cinchona in the metropolis at the time was nearly expended, and the drug was therefore to be had only at a very exorbitant price. This was owing to the circumstance that a most strict embargo had been laid by the French Emperor against every thing imported in British vessels from abroad; and it is well known that the French had scarcely a ship at sea. The Polish physicians had set the example of trusting chiefly to the use of the Arseniate of Soda; but this was found on experience to be a rather unsafe remedy to have recourse to in all cases. Dr. *Marc*—long one of the ornaments of French medicine—happily thought of the sulphate of iron, and used it in a great multitude of cases with the most decided success. Indeed in several instances it effected a cure of the disease, after bark had failed. M. *Corvisart*, the leading physician of the Court, wrote to Dr. *Marc* in the most flattering terms of compliment on the importance of his discovery. He received moreover a handsome reward from the Emperor.

We hear nothing in the present day of the use of Iron or indeed of almost any remedy save cinchona and its alkaloid basis, in the treatment of intermittent fevers. Perhaps this is to be regretted, as similar circumstances to those, in which M. *Marc* and his professional brethren were placed thirty years ago, may often recur to different nations. Some of the French physicians in Algeria report very highly of the substitution of arsenic for bark. One, for example, goes so far as to say:—

"It is the best febrifuge with which I am acquainted; for seventeen chronic cases, which had resisted the action of quinine and sulphate of iron, successively yielded to its employment. The average duration of the arsenical treatment was five days. I have seen a good many cases of the disease in Africa, in which bark and its various preparations failed in putting a stop to the morbid accessions.

"One great advantage of the arsenical solution is its tastelessness, and another, of even greater importance on many occasions, is its trifling expense. Every year France pays to South America considerably more than a million of francs for the supply of cinchona; whereas the price of arsenic, as every one knows, is exceedingly small."

It is always well, in medical as well as in other matters, to have more than one string to our bow; and it is therefore much to be desired that the comparative efficacy of different anti-periodic medicines—either alone or in conjunction with bark—should be fairly tested on a large scale.

How strikingly does the action of those remedies, that have been found on experience to be really useful, show that there is a marked analogy between Ague and Neuralgia.

8. *Droll Request of a learned Academician.*

"M. *Baudelocque* requests of the Academy that it will appoint a committee, before which he undertakes to prove that he never loses either a woman or an infant after delivery, whether this has been natural, or complicated with hæmorrhage, convulsions, præternatural position of the child, &c., *provided* he has been called in from the very commencement of the accident, and before any attempt has been made to terminate the accouchement. As a matter of course, he excepts from his proposal all cases of deformity of the pelvis, and of extra-uterine pregnancy."

Well, this modest request out-herods all the regular professional puffs we have ever met with. Hide your diminished heads, all ye Hygiests, Homœopathists,

Hydropathists, &c. &c. for most of you admit that you do meet with occasional failures; but here is a hospital physician tells us that he never does! These Frenchmen are surely strange mortals.

9. *Arsenic in Inveterate Syphilis.*

A woman, who had lost the whole of her palate from syphilitic ulceration, and was in a most deplorable state of suffering, so that there seemed scarcely any chance of ultimate recovery, was put upon a course of the Arsenical solution (*Fowler's*): she began with three drops, and gradually raised the daily dose up to thirty.

After continuing the use of the medicine until she had taken two ounces of the solution, the amendment was truly surprising; the ulceration was arrested, and the general health rapidly improved: the power of deglutition also was almost completely restored.

In the same German Journal [Hæser's Repertorium] is reported a well-marked case of scirrhus of the mamma, where the progress of the disease seemed to be quite arrested by the internal use of the Ioduret of Arsenic: in the course of six months, as much as 135 grains of this very active remedy were taken. It should be mentioned, however, that an issue was at the same time inserted in the corresponding arm—a remedy, by-the-bye, that should seldom be omitted in the treatment of all malignant formations.

(Of late, the Chlorate or Oxymuriate of Potass has been tried, by many of the hospital surgeons in this Metropolis, in cases of lupus, unhealthy ulcerations, &c. with very decided benefit—the dose from five to ten or twenty grains three times a day).

10. *The Use of Tea.*

A French Journalist thus learnedly writes:—"The difference in the vital instincts of different nations is remarkably exhibited by the use of this beverage (tea): for who, pray, are they which consume by far the greatest amount of it! Certainly neither the French, nor the Italians, nor yet the Spaniards; but the English and the Dutch—two nations that are perpetually immersed in a cold heavy and damp atmosphere, and whose inhabitants are soft and flabby in flesh, and dull and phlegmatic in character. (What say you, John Bull, to your portrait?)

"The English and the Dutch cannot dispense with this, their favourite drink; and if they had not it, they would be obliged to have recourse to some other. (Very true; but what of that?) The use of tea certainly assists the powers of digestion, determines to the surface of the body, and proves a gentle stimulant to the whole system."

(Our wise neighbour writes as if the English and Dutch were the only people who make much use of tea. Not to mention the Americans, may we ask, do the Chinese, and all the Tartar tribes belong to the same category in point of national temperament? The would-be reasoning of the writer should, one might have thought, have led him to the very opposite conclusion; for if tea acts by being a stimulant, surely coffee is a much greater one; and therefore it should have suited a phlegmatic people best.)

11. *On the Utility of Moral and Physical Pain.*

Such is the title of a short work, recently published by M. *Mojon* of Geneva, and translated from the Italian by his friend Baron *Michel*. It is, says the reviewer in the Annales de la Chirurgie, a work as remarkable for the choice of its subject, as for the elevation of its sentiments, and the elegance of its language. The object of the author is to show that pain is alike useful and necessary; and this he does, not only by most ingenious reasoning, but also by quoting the opinions of many distinguished philosophers in different ages. The testimony of

Plato, Seneca, Cicero, M. *Cousin*, not to mention that of many other authors, ancient as well as modern, is adduced and commented upon.

He cites numerous examples, too, from the records of history in support of his benevolent views. Altogether this little work is exceedingly well worthy a perusal, and is calculated to do good service to society.

(There is a beautiful chapter on this subject in the 'Student,' (a series of Essays) by Sir *E. Bulwer*. We remember being much pleased when we first read it; and, although that is now a good many years ago, we can recal to our mind several passages of it with no ordinary satisfaction. What concentration of thought there is in these two lines of our inimitable Shakspeare—

"There is a soul of good in all things evil,
Could men observingly distil it out."

Well would it be for the present age if our authors showed that they *felt the force* of such a high-toned and masculine morality. Medical men, too, might often have it in their power to soothe the bodily and mental sufferings of the sick, far more effectually than they can do by stupefying the system with opiates, if they but availed themselves of every fit opportunity of administering the consolation that such a noble reflection is so well calculated to impart. The subject of Medical Ethics is not attended to, in the present day, nearly so much as it ought to be. We know not a finer theme for a work, that might be made both interesting and instructive, than this.)

12. *Entozoa in the Blood of Dogs.*

MM. *Gruby* and *Delafond* recently exhibited to the Academy the blood of a dog, in which numerous living *filariæ* were readily visible with the aid of a microscope. The size of these entozoa was about one-half or two-thirds of that of a blood-globule: their body was transparent and colourless; the anterior extremity was obtuse, while the posterior or caudal one terminated in a fine filament. The movement of these animals was very lively. When a drop of the blood was examined with the microscope, they were observed to be swimming about with a sort of undulatory motion among the globules, twisting and untwisting themselves with great vivacity. They continued alive for ten days after the blood had been drawn. They were found in the blood taken from all parts of the body, the jugular veins, the vessels of the abdomen, of the eye, &c.

The dog appeared to be in perfect health at the time. The writers say that this is the only instance in which they ever discovered the presence of these entozoary worms, although they have examined the blood of upwards of a hundred dogs at different times—some before, and others subsequently to, the present occasion.

13. *Extract of Cantharides, a useful Epispastic.*

M. *Soubeiran* has published, in a recent number of the Journal de Pharmacie et de Chemie, the formula for a blistering preparation, that is a good deal used in many parts of Germany. It is prepared by digesting with a gentle heat four parts of roughly powdered cantharides, one part of concentrated pyroligneous acid, and sixteen parts of alcohol, filtering the mixture, and slowly evaporating the fluid. The product has a buttery consistence; and, if smeared on a piece of paper, and thus applied to the skin, will be found to raise a blister in a short space of time. The consistence of this preparation, and more especially the presence of the acetic acid, suffice to prevent the cantharadine from crystallizing—a result which always takes place with the etherial extract, and constitutes a great objection to its use.

14. *Profanity of a French Medical Journal.*

While we denounce the ribald tone of some of the articles in the Examinateur

Medicale, conducted by MM. *Dechambre* and *Mercier*, we must do justice to the rest of the Medical press in Paris, by acknowledging that we have never met with any thing in their pages calculated to give offence to the scruples of the most fastidious. In the number of the Examinateur for the 1st of February last, the *feuilleton* article is headed, "the Anatomy, Physiology and Pathology of Man in another World." The writer, in a spirit of very profane levity, seeks to amuse his readers by quoting extracts from the Bible itself, but chiefly from the writings of some of the early Fathers of the Church, to show that our bodies shall rise from the grave nearly in the condition in which they were when committed to the earth, with all their infirmities, and defects about them. We regret to say that many of the passages of the article are quite worthy of a countryman of *Voltaire*. The following is the closing paragraph; it is far less objectionable than much that precedes it; but it will suffice to convince our readers that we do not condemn unjustly. "In fine, it may be seen, by what we have said above, that all the elect will arise at the latter day in a state of perfect development, with their distinctive sex, and entirely exempt from all desires, diseases and deformities. And as it cannot for a moment enter into our thoughts that any of our dear *confreres*, to whom these lines are especially addressed, shall form part of the *bad grain*, this result of our pious investigations has filled our heart with an indescribable satisfaction; for, whatever other people may say, one is always well pleased to know '*qu 'on fera bonne figure pendant l'eternité.*'"

As a *set-off* to this unfavourable specimen, we shall select a short passage from M. *Serres'* recent work on Transcendental Anatomy.

15. *The Harmony of Design throughout Creation.*

"Every thing is great, every thing is admirable in Nature; what may appear in it irregular and imperfect implies regularity and perfection; and order is maintained even in the midst of seeming disorder. But the human mind, accustomed to study the phenomena of life in the higher animals only, has formed to itself an absolute, and therefore very imperfect, idea of creation. Whatever does not attain to or passes beyond our conventional types, and whatever deviates from the most generally received arrangements, is often at once declared to be an infraction of the laws which we had supposed to exist, and, as such, it is sometimes rejected from the domain alike of Nature and of science. Hence has arisen a great deal of that ignorant presumption which has been displayed on the subjects of what have been called Organic Anomalies or Monstrosities, and which, at different times, has vainly attempted to restrict animal life and animal functions within certain limits that we imagined *ought to exist*.

We have seen that *Aristotle* fancied that the existence of a heart was essential to animal life. *Galen* bewildered himself amid the labyrinth of final causes, and boldly declared that many things were utterly impossible in Nature, merely because (the causes, were not apparent. Even *Haller*, in his old age, fell into the extravagance of admitting the existence of functions without the presence of organs; and it has been only within the last few years that organic anomalies have not been rejected with abhorrence from the field of physiology. All this appears to us very absurd *now*; and yet not a few physiologists, even in the present day, do not persist the less in the adoption of similar ideas. Thus it is that, because we think that we understand the plan on which the higher tribes of animals have been formed, we immediately declare that whatever deviates from this plan and is at variance with our established notions, must be at once rejected and placed in another category."

Clinical Review.

CLINICAL LECTURES ON THE THEORY AND MEDICAL TREATMENT OF INSANITY. BY ALEXANDER JOHN SUTHERLAND, M.D.

These excellent Lectures, which were delivered at St. Luke's Hospital, in the early part of May, are published in the *Medical Gazette*. We shall select a few points for extract.

Hallucinations and Illusions.—These terms have often been misunderstood. Hallucination is a creation from within, illusion is a mistake from without: the mirage is an example of an illusion which the thirsty traveller of the desert is taught to correct. Supposed visions are examples of hallucinations; both the one and the other are compatible with perfect sanity; for example, our Saxon ancestors believed that they were pursued by the fauns, forest-fiends, &c. which haunted the abodes of their fathers in the wilds of Germany. We call this superstition, not insanity. Visions of imagination have also appeared to all classes of persons; young and old, saints and sinners. Such examples are often met with in cases of aberration of intellect; the nerves of hearing and of sight are most commonly the seat of injury; commands issuing from supernatural voices, warnings from deceased friends, persecutions from ideal enemies, visions of angels or of devils, frequently embarrass the bewildered imagination; the nerves of touch are certainly less commonly found disordered than the rest. In some cases, hallucination of one sense, and illusion of another exist together.

Examples of hallucination of smell are not very uncommon, especially in the case of those who imagine that they suffer the tortures of the condemned; these delusions, also, often accompany alterations of the nerve of taste. False perception of taste, unconnected with a foul tongue, and derangement of the stomach and bowels, are rare. A patient imagined she had murdered a child; she refused her food because she thought it was the flesh of the victim she had slain, and would not drink, because every thing she swallowed tasted, she said, like human blood. The tongue was not loaded, the bowels were not costive; the false perception, therefore, must be accounted for either by supposing, with Esquirol, that it was created by the imagination, or by concluding, with Foville, that it was due to disease at the origin of the nerve in the brain, not to its termination in the mouth.

Hallucinations of the Nerves of Touch are the most rarely met with: under this head the following instances may be placed.

A young officer imagined that by touching people, he had the power of magnetizing and attracting them. Another patient imagined that her head had been cut off, and that it was rolling about the room like a ball. The story of the turned head, so well told by the able author of the "Diary of a Physician," is not mere fiction. Dr. Sutherland has met with cases very similar to it. One man thought that his head was set on the wrong way, (as the poor person who was saved from the guillotine.) A patient, now in St. Luke's, fancies that all her bones are turned round.

Illusions from Morbid Impressions on the Nerves.—Many examples of these are given. It is remarkable how readily the patient seizes upon some slight impression upon any of the senses, and converts it into something connected with his delusion. Dr. Sutherland happened to prescribe the compound galbanum pill

for an old sportsman, who was labouring under insanity with hypochondriasis; he thought, from the smell of the assafœtida, that he had been metamorphosed into a fox, and that he was to be turned out the next morning before the hounds. A gentleman, labouring under a religious delusion, happened one evening to be in a large room lighted up by a single lamp, which occasioned a flickering light to appear on the ceiling. The gentleman immediately declared that the roof had opened, and that St. John, surrounded by a halo of glory, was bidding him be of good cheer. An Irishwoman in St. Luke's, a short time ago, after listening to the sounds of the clock for some time, stopped it because she thought it was calling her names.

Dr. Sutherland remarks, that it is of great importance in practice to attend to these altered perceptions; if you set them down as the mere effects of imagination, and do not stop to inquire whence they arise, and what is the probable cause of their existence, you will undoubtedly treat the disease very badly; and your attention may at last be called to the symptom when medicine is of no avail. "Patients either with or without the sensation of pain about the præcordia, imagine that they are possessed with devils, or have live animals in their stomach: I recommend you never to overlook such symptoms. Some madmen eat their food voraciously, and without even attempting to masticate it. A patient in St. Luke's, who was in the habit of doing this, had had a severe fall upon the back part of his neck: his friends said, he never knew when he had enough to eat; it is not impossible that the eighth pair of nerves might have been injured by the fall. There are those who eat their own flesh, and other matters which I need not mention here. This is always a very bad symptom. There are others who refuse food, and it has been too often the habit to order them to be fed with the stomach-pump, without taking into consideration the state of the bodily symptoms. I am confident that the majority of patients who refuse to eat, do so because there is irritation of the stomach and primæ viæ; if you order an emetic or a purgative, you will generally find this symptom disappear.

Esquirol never saw any dangerous consequences ensue in mania from obstinate refusal of food; in monomania, however, the case is otherwise; patients who have tried every other means to destroy themselves, will sometimes endeavour to starve themselves to death, and all our art is called into requisition to avoid such a catastrophe."

Capability of the Insane to bear Heat and Cold.—This, as well as the power of doing without sleep, Dr. Sutherland thinks has been over-stated. It is very true, that some patients can expose themselves to the rays of the sun, and go almost naked in the coldest winter, with impunity; but this insanity is not only the result of the abstraction of mind, it is owing also to the benumbing effect of the disease upon sensibility generally. If you do not protect these patients against extreme cold, or intense heat, you will soon find them suffering, on the one hand, from mortification of the feet, and, on the other, from repeated exacerbations of furor, which too probably will end in dementia; and if you do not take proper precaution, that your patient be soothed by refreshing sleep, the exhaustion subsequent to his long watchfulness will be a great hinderance to his recovery.

Alterations of Motion.—The motive power may be increased or diminished in intensity. It is sometimes increased to a surprising extent during the maniacal paroxysms, and in catalepsy. In some rare cases, the patient will turn neither to the right hand nor to the left, but runs straight on, impelled by some irresistible impulse, till stopped either by exhaustion, or some obstacle obstructing his course. One of these cases, was a young lady under Dr. Sutherland's care, whose insanity was manifested, in the first instance, by her getting out of bed in her night-dress, and going in a direct line over hedges or anything which came

in her way, till she was at length, with difficulty, extricated from a pond. A female patient, when first admitted into St. Luke's, would get off her chair, and walk round two or three times in a circle, the left side being always turned towards the centre. These cases are interesting, when we reflect that similar results followed the removal of the corpora striata, and lesion to the medulla oblongata, in M. Magendie's experiments.

When the motor nerves are affected in cases of insanity, it is always a bad sign. Esquirol says, that insanity when complicated with lesions of motion, or with epilepsy, is never recovered from. Dr. Sutherland, however, considers that it makes an essential difference if the lesion of motion has preceded, not followed, insanity: he has seen insane persons completely recover who have been epileptic, provided the fits came on first, the madness afterwards; and the same with paralysis.

"Ptosis of the eyelid, and strabismus, are bad symptoms, more especially if either is permanent. A synchronous action of the pupil, dilatation of one iris, and contraction of the other, are also bad signs; but if the sphincters be involved, the patient is not likely to recover, and if the muscles of deglutition participate in the mischief, the case is hopeless."

If general paralysis occur, the case may be considered incurable. It is of great consequence to accustom the ear to the speech of those suffering under this form of madness; the first sentence the patient utters will generally enable you to detect the disease; there is a thickness, a hesitation in speaking, very like the speech of the drunkard. Patients have a difficulty in pronouncing the letter R; if you make them say the word February, they will generally fail. There is very frequently a general tremor of the muscles; occasionally this tremor may be observed in the upper lip alone, the muscles in the other parts of the body not being affected. It is not the power so much as the general precision of the voluntary motions which is lost. If a patient, for instance, attempts to write, he will scarcely be able to hold a pen; or if he walks, there is an irregular gait, he leans over to one side, and drags one of his legs. The last stage of the complaint is accompanied by sloughing sores on the sacrum, incontinence of urine and fæces, death by coma, convulsions, or epilepsy.

The delusions which accompany general paralysis are very frequently those of great magnificence. The patients imagine that they have millions of money; that they are about to pay off the national debt; they often also think themselves happier and stronger than they were before. Soon, however, a change takes place, the faculties of the mind fail, and hopeless fatuity succeeds.

With regard to the pathology of this form of general paralysis, Esquirol says that it is often a symptom of chronic inflammation of the meninges. M. Calmeil considers that it is due to disease of the cortical substance. M. Foville believes it to depend upon alteration of the fibrous structure; he says that adhesions exist between the planes, which are easily separated in a healthy person, but cannot be in many of those of the insane; every effort you make to do so only tears them. Dr. Sutherland, however, believes that this last hypothesis is not correct, at least in all cases, as he has seen the fibres quite as disunited in general paralysis as in health. The appearances most often found are, perhaps, considerable injection of the medulla oblongata; effusion of fluid in the subarachnoid cellular tissue and in the ventricles; the pia mater thickened; the substance of the brain infiltrated, sometimes soft, sometimes tough and elastic, with the fibres well marked, as if the brain had been for some time steeped in alcohol. The disease, it appears, does not always commence in the brain and thence spread itself to the spinal marrow; it sometimes commences in the medulla oblongata and radiates to the hemispheres.

State of the Pulse.—Many authors assert that the pulse is not affected in cases of insanity; this, however, does not accord with Dr. Sutherland's experience, as

will appear from the state of the pulse as recorded in 50 patients admitted into St. Luke's.

	On admission.	*On discharge.*
	from 40 to 50	in 1 case.
In 5 cases	from 60 to 70	in 2 cases.
	from 70 to 80	in 1 case.
In 6 cases	from 80 to 90	in 21 cases.
In 4 cases	from 90 to 100	in 3 cases.
In 34 cases	from 100 to 120	in 20 cases.
In 1 case	above 120	in 2 cases.

The pulse was slower than on admission when the patient left the hospital in 31 cases, quicker in 12 cases, equal in 7 cases. Hypertrophy of the heart is not very uncommon in this disease.

Is insanity an inflammatory disease?—It very seldom happens that we find in insanity acute inflammation. If such symptoms were present it would be impossible to distinguish phrenitis from insanity. If fever is present, which is not very generally the case, it follows the delirium in insanity, whilst it precedes it in phrenitis. In delirium, the mind is occupied solely with the past, in madness with the past and present also. In phrenitis, the blood presents the buffy coat, in mania it does so very seldom. In post-mortem examinations of the insane, we meet with the results of congestion or of chronic inflammation, seldom those of acute inflammation. This is a point of practical import, "for if you are called in to see a patient in a paroxysm of mania, and have read that the disease owes its origin to inflammation, you would be doing very wrong if you were to bleed him freely. I believe that every variety of congestion exists in insanity, whether active, passive, or mechanical. The blood is either in excess, or deficient in quantity, and the circulating fluid acts sometimes as a poison to the brain. The reason why we find variation, I had almost said contradictions, in the mode of treating the same case of insanity is, because one thinks only of inflammation, and bleeds, another considers the symptoms due to irritation, and employs opiates or stimulants."

It is frequently of service to place the insane patient in a recumbent posture, in order to see whether the symptoms are aggravated or relieved by the gravitation of the blood towards the head, as this serves as a useful guide in the employment of remedies.

Passive congestions, the blood appearing to stagnate in the capillaries, not unfrequently occur in cases of insanity. Patients in this condition are generally weak and sluggish in their movements; little animal heat is evolved; the skin loses much of its sensibility; the pulse is so weak as to be scarcely felt. The lips of the patient are often blue; on assuming the recumbent position, they regain their natural colour. Occasionally sudden congestion occurs, ending frequently in apoplexy. Congestion of the liver is not uncommon in cases of insanity; organic disease of this viscus, however, is rare.

Sleeplessness is a very common symptom in the early period of insanity. Dr. Bright attributes the frequent attacks which epileptics have in the night to slight congestion, which he says always accompanies sleep. This is the reason that the insane so often do not enjoy this temporary release from care. Unless there be some bodily disease, as fever, present, a patient should never be allowed to remain in bed during the day, as the recumbent position will of course favour the congestion.

Complications of Insanity.—"Although there is no disease with which insanity may not be complicated, yet there are some more commonly met with in conjunction with it, than others: *e. g.* scrofula, phthisis, inflammation of the lungs,

diseases of the heart, congestion of the liver, diseased kidneys, inflammation of the mucous lining-membrane of the intestines, diarrhœa, erysipelas, epilepsy, apoplexy. Sometimes an attack of diarrhœa, of phthisis, or of fever, will put a stop to the attack of insanity; sometimes the attack will be merely suspended. The approach of the catamenia is always a critical period with our female patients; the disease is then often aggravated, and paroxysms of fever occur; the return of the monthly period sometimes gives an intermitting character to the disorder, and the hopes of the friends and of the physician are alternately raised and depressed. It is not uncommon to meet with insanity manifesting itself in one member of a family, while nervous disorders akin to it develop themselves in the rest. This takes place, also, occasionally, with respect to other diseases, which are not of a nervous type, *e. g.* scrofula and phthisis."

Post-mortem Examinations.—Dr. Sutherland remarks that nothing is ever found in the brain of the madman which can be said so to be characteristic of the disease. Perhaps the more general appearances are these:—The dura mater adheres more or less firmly to the pia mater. The vessels and sinuses of the dura mater are sometimes gorged with blood. The arteria meningea media is frequently injected to its most minute ramifications. The membrane itself is sometimes also much thicker than natural; small deposits of bone are also occasionally found, particularly on the falx. The glandulæ pacchioni are not more numerous in insanity than in other diseases. The arachnoid membrane is very frequently found opaque and thickened; the opacity being sometimes general, sometimes partial. It is more frequently met with on the surface of the hemispheres than at the base of the brain. M. Foville considers the opacity and thickening of the arachnoid, and its adhesions with the pia mater, not to be the simple effects of inflammation, but of a deposit of albuminous layers.

The arachnoid is sometimes perfectly dry: its surfaces are not lubricated by the smallest quantity of serum. In general, however, there is much effusion of clear transparent fluid into its cellular tissue; it is not often that this fluid is coloured. This appearance must not be taken as an unequivocal proof of inflammation of the arachnoid; for it may be caused by congestion of the veins, or be the result of poverty of blood.

Dr. Sutherland thinks that this effusion is often the consequence of atrophy of the convolutions, as he has observed, in some cases where the atrophy has been very limited in extent, that serum has collected here under the arachnoid, which has shown no signs of inflammation: upon one or two occasions this effusion of fluid has been so circumscribed by the membrane as to be at first mistaken for a transparent cyst.

The pia mater is sometimes found adherent to the arachnoid on the one side, to the convolutions on the other. It is sometimes much thickened, and in recent cases generally injected. There is great variation in the quantity of blood, and in the state of the capillary vessels.

Alterations in the Cortical Structure.—In acute mania, the convolutions have a tendency to hypertrophy, in chronic mania to atrophy. In acute cases the pia mater is seldom found adhering to the surface of the hemispheres; the convolutions are well developed; when cut there is as well-defined a separation between the cineritious and fibrous structure as in a healthy brain: the white bands may be traced in every part running parallel to the external and internal surface; but the cortical structure is much injected, and frequently presents a marbled appearance.

The chronic alterations are more marked than those of the acute. The pia mater frequently adheres to its surface; and a layer of softened gray matter is sometimes separated in the attempt to peel it off. The diminution of bulk takes place both on the surface and in the centre of the convolutions, so that wide sulci

are left between the folds, and a very thin layer is spread over the fibrous structure: the white bands have either disappeared, or the colour of the ganglion globules is so faded that they cannot be distinguished. The external layer of the cortical structure is sometimes firm while the internal layer is soft.

Alterations of the Fibrous Structure.—On slicing the brain, numerous bleeding punctæ are frequently seen. This varies in intensity from the few specks seen in healthy brains to patches of extravasated blood. Too much stress, however, as Dr. Seymour observes, must not be laid on this appearance. Sometimes the brain is extremely firm, appearing like hard albumen; at other times the brain is remarkably soft. Ramollissement is not very uncommonly met with. The ventricles are frequently distended with fluid, and their walls found gaping and inelastic.

Dr. Sutherland in his analysis of these post-mortem observations draws attention —1st, to the many different morbid appearances which accompany the disease; 2ndly, to the many similar appearances which give rise to its different species, and are found where insanity does not exist.

"Now although we may look to the cortical substance as giving us the most conclusive evidence of variations from healthy structure, yet we are far from being able to say in what the first departure from such healthy structure consists. Do we call it congestion? This is the mere effect of something which has caused previous irritation. We know well how different in their nature the causes are which produce congestion—whether passion, over-exertion of intellect, diseases of the heart and lungs, stomach and intestines, narcotic poisons, &c. It would appear, then, that beyond what morbid anatomy teaches us, there is some change in the brain which, influenced by individual susceptibility, is the primary cause of the various phenomena which we recognize in madness. In this, as in every other disease, morbid anatomy alone cannot guide us in establishing just views of pathology."

Medical Treatment.—Dr. Sutherland confines his observations in these lectures to the medical treatment of insanity, as it is a subject which has been, from various causes, much neglected. Of course it is necessary to be fully cognizant of disease in the sane patient, in order to detect it when masked by insanity. It requires great observation and attention to be able to separate the real from the imagined pains of the lunatic; the previous diseases, habits or occupation of the patient may tend to throw some light upon the method of treatment.

Dr. Sutherland advises a systematic arrangement in each case. "Observe the state of the pulse and the skin; feel the head; see whether it is hot all over, or in one part only; whether the extremities are cold; whether the tongue is loaded and dry; whether the bowels are open, the urine free, and, if the patient be a female, whether the catamenia are regular. Next observe the breathing, and the action of the heart; pass your hand over the right hypochondrium, and feel whether the liver is enlarged, or whether the abdomen is distended with flatus; and whether there be tenderness about the præcordia. Examine also the beating of the carotids and temporal arteries. When the patient has his head back, and his neckcloth unfastened, you may perhaps see a scar on the throat, which will let you into a secret. The expression of countenance, the complexion, the colour of the conjunctivæ, and the action of the iris, must all be carefully noted. When you are observing the eye, ask the patient whether he sees moats floating before him: and this may lead him to speak of his illusions or hallucinations. When you have exhausted these, ask about his sense of smelling; you may discover, perhaps, that he smells brimstone, and imagines himself lost to all eternity. Now inquire whether his taste is altered; if it be, he may fancy that his friends have conspired to poison him. Then pay attention to the sense of hearing; and lastly, to that of touch. You will now be prepared to draw him into conversation, in order to

ascertain whether his emotions are changed, or whether one or more of the faculties of the mind be disordered."

Purgatives.—The use of these medicines is of great importance, from the great frequency of constipation in insanity, and from the fact that some cases recover after a severe diarrhœa. The preparations of mercury are very useful, not only for their purgative effects, for stimulating the liver and relieving it of the congestion so often found in recent cases, but they are of great service in equalizing the circulation in the capillaries; thus in those cases where, from the heat of head, the injected conjunctivæ, and other symptoms, we have to fear congestion of the cerebral vessels, their use is manifestly indicated. In cases where there is reason to suspect incipient paralysis, or even where the disease has begun to develop itself, Dr. Sutherland has derived much service from the liquor hydrargyri bichloridi, given in 3ss. to 3ij. doses two or three times daily, with occasional purges. The importance of continuing this medicine for a considerable time has not been sufficiently insisted upon in such cases: it is long, indeed, before the specific effects are felt in the constitution; and it does not seem necessary that these effects should be produced in order that the good results should follow.

In the first stage of mania, when there is heat of skin and of the head, it is as well to give a full dose of calomel, repeated for two or three nights in succession, according to circumstances. Or blue-pill may be given with the extract of colchicum, to procure an abundant discharge of bile. These will be of great service if the tongue is loaded and the conjunctivæ yellow. If the patient refuse medicine, the endermic method may be employed.

"If the patient has recovered from the acute stage of mania, and the evacuations are still unhealthy, and the action of the liver sluggish, with much general debility, you will find it of use to give the nitro-muriatic acid in a light bitter infusion. The extract of taraxacum is likewise a drug which has its use, both as acting on the liver, and for its diuretic effects. It may be combined with the aromatic spirit of ammonia, in cases where there exists depression of spirits and flatulence. Among the purgatives derived from the vegetable kingdom, jalap and rhubarb are most in vogue. The house-medicine at Bethlehem hospital is calomel and rhubarb; that of St. Luke's, the former with jalap. Where you wish to have a copious discharge from the exhalant vessels, and to draw upon the excretory ducts of the mucous glands of the intestines, and to increase the secretion of the kidneys, jalap is a most serviceable remedy, and one which you may, generally speaking, safely employ. If you wish a more powerful drastic purgative, you must have recourse to elaterium; but this will seldom be either necessary or safe."

Two cathartics Dr. Sutherland is in the habit of giving to the hospital patients: one, a purgative with some vegetable bitter infusion, as in the mist. gentianæ comp. of the Pharmacopœia, for those whose muscles are relaxed, and who might not be able to bear an active purgative. The other is the croton oil, for those patients who refuse medicine, and where it is essential to promote regular action of the bowels.

Emetics.—These were at one time much recommended; Dr. Sutherland, however, does not often employ them in insanity for two reasons. First, because where there is a tendency to congestion in the vessels of the head, they are known to increase it; secondly, because the nerves of the stomach in insanity, as those of the intestines, are frequently less sensitive to impressions than in a state of health, owing to the disease of the brain; and it is necessary to give a large dose before the stomach will act. Nauseating doses of these remedies are valuable. A fourth of a grain of tartar emetic may be given every four hours, or at the commencement of the paroxysm of furor; this controls powerfully the action of the heart

and arteries. In many cases it acts like a charm, subduing the excitement and violence of the patient, and sometimes an alteration of the symptoms for the better commences with its administration. If, however, the doses are large and repeated, great prostration of strength may be produced.

Narcotics.—Much difference of opinion exists with regard to the benefit to be derived from their administration. Dr. Sutherland's experience leads him to the conclusion, that opiates are of essential service in those cases of insanity which border closely upon delirium tremens; in cases of puerperal mania; in the first breaking out of an attack of madness, before congestion has taken place; in cases where there is great nervous irritability, from poverty of blood; and in cases of cachexia from starvation, and other causes: they are contra-indicated wherever there is the least sign of general paralysis or congestion about the head.

Hyoscyamus and conium may be employed as well as opium and morphia. Hyoscyamus often agrees better with the stomach, and it does not constipate the bowels; it also increases the secretion of the kidneys and of the skin. It is often serviceable, combined with tartar emetic, in paroxysms of furor.

Combined with camphor, opium allays the irritability of those suffering under madness, either accompanied with some degree of delirium tremens, or preceded by it. Stramonium, belladonna, and aconite are not, in general, of very much importance.

Hydrocyanic acid is useful as a sedative in those cases where there is pain and a sense of weight about the præcordia. If acid eructations are present, it may be combined with soda, or, if there be much action of the heart and arteries, with digitalis.

Diuretics.—The urine of insane patients is very often, at the commencement of the attack of mania, scanty and high-coloured, with a lateritious sediment. Sometimes no water is secreted for a day, sometimes for two days. In these cases nitric æther, with nitrate of potash, infusion of digitalis, or the compound decoction of scoparius may be given with advantage. The more powerful diuretics are seldom of much service; even where you suspect effusion, or in incipient paralysis, the bichloride of mercury is generally to be preferred to cantharides.

Tonics.—Since the insane have been better fed, there have been, on an average, more recoveries and fewer deaths. Even in acute mania it is necessary to have reference to the future condition in our treatment. Light bitters, mineral tonics, the preparations of iron, the sulphate of zinc, and the salts of copper, are often valuable medicines in nervous disorders.

Blood-letting.—This practice fortunately does not prevail in England as it formerly did. Even in acute mania with symptoms of plethora, local abstraction of blood by means of leeches is a much more safe means of proceeding.

Counter-irritants.—These are much employed in the treatment of insanity. They should not, however, be used in the acute stage of mania, certainly not till the heat of skin and general irritation from the loaded vessels have subsided. The acetum instead of the emplastrum lyttæ ought generally to be employed.

In some cases of insanity which run their course sluggishly, or where there is a healed ulcer, or a suppressed discharge, setons are of great service. Esquirol says they act as if by enchantment. The ung. antim. pot. tart. proves beneficial in some cases of suppressed eruptions, and as a counter-irritant.

Strychnine has proved serviceable in catalepsy; it is also useful in cases of insanity accompanied with paralysis. Where patients have illusions of hearing, cotton, on which laudanum has been dropped, may be put in their ears: it is also useful to have the ears syringed, or to place small blisters behind each ear, to

divert the attention of the patient from the noises and whisperings on which his imagination dwells.

The function of the skin is often disordered in insanity, to remedy which state baths of every description have been, very properly, recommended. The tepid bath is of great service in subduing irritability and excitement. It is sometimes necessary that the patient should remain in it for an hour and a half or two hours. Ice or cold lotions to the head should be applied at the same time; it may be necessary to repeat it every day, sometimes twice daily, till some effect is produced.

If the irritation is not subdued, a blister may be applied to the nape of the neck, immediately the patient leaves the bath. In acute dementia, much benefit may be derived from the douche, but this is a remedy which requires caution, and is not by any means to be ordered for those patients who are liable to congestion of the head, or have any tendency to paralysis.

The shower bath, with antispasmodics, is a valuable means of subduing the symptoms of madness with hysteria and hypochondriasis.

When a patient has passed into what is termed the chronic stage of the complaint, it by no means follows that nothing is to be done for him; something can be effected by medicine even here, in shortening the paroxysms of furor, in procuring sleep for the restless, and improving the general health of the debilitated.

ST. GEORGE'S HOSPITAL.

Report of Cases occurring in the Practice of Mr. Henry James Johnson, Assistant-Surgeon to the Hospital.

The following are selected from amongst the many of a miscellaneous character, which have been under treatment lately.

I. CHRONIC ABSCESS IN THE SUBSTANCE OF THE TONGUE.

Case.—Thos. Adams, aged 17, a vendor of cat's-meat, came under my care on the 10th of May of this year.

In the substance of the tongue, on the right side of its median line, and about three quarters of an inch from the tip, is a hard, globular tumour, of about the dimensions of a small marble. There is occasionally some shooting pain in it, and it is rather tender upon pressure. The speech is rendered indistinct by it. No enlargement of lymphatic glands. Face somewhat puffy, but health reported good.

He states that he first perceived the swelling, accidentally, nine months ago. It was then very small, and has increased gradually since. Painless at first, it has become tender within the last three weeks. He can assign no satisfactory cause for it.

The tumour felt as hard as a scirrhous tubercle, but the age and appearance of the lad combined to render that idea improbable. The globular form and firm resistance conveyed to me the impression, that there was either a cyst with thickened walls, or chronic abscess. I therefore introduced the exploring needle, and was gratified to observe a drop or two of distinct, yellow pus, escape along the groove. The size of the swelling was little reduced by the evacuation, and it was evident that the parietes of the abscess were so consolidated as to form the bulk of the tumor. I prescribed—

Pil. hyd. chlor. comp. gr. v, omni nocte;—Dec. sarsæ comp. ℥ij. bis quotidie;—Magnesiæ sulph. ℥ss. p. r. n.

By the 15th of June, one month from the puncture, the tumour was reduced to

half its original size, but continued very hard. It was quite unattended with pain, but still occasioned difficulty of articulation.

By the 4th July no trace of the complaint could be detected, but, seemingly from habit, the speech was still thick and indistinct. It may be stated that the gums were never affected, and that the health improved.

A few days after this, he was attacked, without obvious cause, with inflammation of the globus major of the epididymis, on the right side. This speedily subsided under calomel and opium, leeches, saline purgatives, and the application of a belladonna plaister. On the first of August, he was discharged cured.

I apprehend that chronic abscess in the substance of the tongue is rare. Acute inflammation is more common, and cysts are occasionally seen in it. But perhaps the most frequent affections of it are cachectic tubercles and ulcerations on the one hand, and malignant growths. or alterations, on the other.

A year or two ago I saw a case which had some little interest attached to it.

II. TUMOUR AT THE SIDE OF THE TONGUE.

A gentleman between forty and fifty years of age, inclined to corpulency, of indolent habits, and rather a bon-vivant, had suffered much, at different times, from dyspepsia. Between two and three years ago, he came to me one morning in a state of some alarm, on account of a swelling which he had discovered on the left side of his tongue. It was opposite the first large molar tooth—when the tongue was protruded, it was about the size of a horse-bean, when retracted it nearly disappeared—was of bluish colour, with one or two large veins on it—was little, if at all, painful or tender—and rather occasioned alarm than inconvenience.

On examining it carefully, I could not satisfy myself of the existence of *any* actual tumour, that is of decided increase of bulk, or hardness, or other modification of density. It conveyed to me the impression of mere hypertrophy of the substance of the tongue, palpable only when the organ was thrown into a state of tension by the action of the genio-hyo-glossus and lingualis.

This opinion I ventured to give, and endeavoured to relieve the gentleman's mind by assurances of freedom from danger. But the idea of cancer had taken hold of him, and quite weighed down his spirits.

I prescribed a mild aperient pill to regulate the bowels, and advised the least possible interference with the part. A tooth, which *might* press on it, was, by Mr. Bell's suggestion, taken out.

Actuated by his apprehensions, Mr. B. did not long follow my advice, but applied to an eminent surgeon. This gentleman conceived that the swelling was a cyst, and punctured it with a needle. Nothing, however, but blood issued. It was then touched at stated intervals with caustic, and medicines of an aperient and tonic character given. But, under this treatment, the swelling increased rather than otherwise, the tongue grew foul, and the general health, the effect, probably, of anxiety, deteriorated.

Under these circumstances, Mr. B. consulted Sir Astley Cooper. Sir Astley, after a hurried examination, pronounced the case one of malignant disease, and advised the employment of the ligature without delay. His worst anticipations being now realized, the patient returned to me, and in a state of extreme despondency informed me of Sir Astley Cooper's opinion. I was naturally staggered by this, and made another and a careful examination, without seeing cause to alter my own. I suggested an application to Sir Benjamin Brodie, whose judgment and candour are so worthy of reliance in every case of difficulty. I gave the patient a note to Sir Benjamin, stating what had occurred. He went into the case fully, and gave it as *his* opinion that there was no disease of any consequence, confirming by his high authority the view and the practice that I had adopted.

The relief to the patient's mind was, of course, extreme; but he could not altogether shake off his fears, and, even to this day, he occasionally becomes alarmed. Being let alone, the *tumor* has sensibly declined, and occasions no pain nor annoyance, yet a fulness is still there, or, rather was there, when I saw him last, which is now twelve months ago, but I believe he is quite well in his general health, and thinks or says little of his tongue. I have lately had a very similar case amongst the out-patients of the Hospital. The patient, a girl, was sent to me for collection of fluid in the sub-lingual gland. No such collection existed.

Perhaps the most common affections of the tongue are cachectic tubercle and ulceration on the one hand, and what is sometimes called psoriasis of the tongue, upon the other. A word or two on each may be excused.

III. CACHECTIC ULCERATION OF THE TONGUE.

Without going fully into its history, it may be observed that this affection sometimes accompanies rupia, ecthyma, or other forms of cachectic eruption or ulcer, and sometimes occurs independently of any other symptom. Whichever is the case, the patient, in most instances, is palpably below par in constitutional vigour, and, not unfrequently, has suffered from the effects of mercury. He is mostly pallid, and the digestive organs are, in many instances, deranged.

Sometimes the free extremity, most commonly one side of the organ is affected; the median line then, forming a barrier against its extension to the other. There is swelling, sometimes tubercular in form, and hard, or rather boggy to the feel —with ulceration, irregular in shape, and of dirty yellow colour, with picked, or imperfectly healing edges. The ulcers may be deep and fissured, or scooped, or almost superficial. It is not uncommon for a turbercular nodule to ulcerate, and disclose its substance permeated by a yellowish substance, which forms the basis of the ulcer. The analogy between this, and the cachectic subcutaneous tubercle of the skin, can scarcely fail to be perceived.

These ulcers may or may not be painful; they are, at all events, a source of inconvenience, interfering, more or less, both with speech and deglutition.

Slow in formation, tedious in progress, they in many instances last for a very long period, and, in most, are tardy in their disappearance. I have known them heal almost miraculously in a very short space of time, and I have also known them hang on for months and even years.

The treatment which seems to answer best, is such as is generally applicable to cachexia. Sarsaparilla, the iodide of potassium, the mineral acids with bitters, quina, the ammonio-citrate and the iodide of iron, &c. in partial combination, and succession, combined with attention to the digestive organs, and such regimen and diet as are calculated to give tone to the general health.

The effects which follow the exhibition of the iodide of potassium are occasionally as remarkable in this, as in other forms of cachexia.

A gentleman consulted me three or four years ago, with this condition of tongue. He had laboured under it for five years, and a source of great distress it had been to him. He had employed a variety of remedies, and its origin could be traced, in my opinion, to abuse of mercury. I prescribed sarsaparilla and the iodide of potassium, with a suitable course of living, and directed the occasional application of a solution of the nitrate of silver to the fissures, with the daily use of the honey of borax. This gentleman went back into the country, from which he had come to consult me, and I heard no more of him for many months, when he called on me to report the rapid cure which the remedies ordered had effected. In the course of six weeks from commencing them, the tongue appeared quite well. He has since had a slight relapse, but it was quickly arrested by the same measures.

The combination of the ammonio-citrate of iron with the iodide of potassium

has seemed, on more than one occasion, a highly serviceable one. The formula is this : ℞. Potassii iodidi.
Potassæ bicarb.
Ferri-ammonio-cit. aing. 3ss.
Tinct. aurantii c. ℥ss.
Aquæ dist. ℥vss.
M. Capt. æger coch. ij magna bis quotidie, superbibendo (post semi-horam,) Extracti sarsæ concent. c. ℥ss. ex aquæ poculo.

In cachectic ulcerations of the skin, resulting from the abuse of mercury, this combination is at times peculiarly valuable.

A gentleman came to me, three years ago, from Lynn, with such ulceration in a severe form upon the leg. It had existed for four or five years, and he had exhausted the medical advice within his reach. He had taken an excessive quantity of mercury, to which, with justice, he attributed the ulceration, which was of serpiginous character, and commenced as soft tubercle. It had not been limited to the limb, but had left unhealthy cicatrices on various parts of the body.

I prescribed the iodine, with iron and sarsaparilla, in the manner above stated, and the result was surprising. In a very few weeks the ulcer healed, the general health was restored, and there has not since been any return of the disease.

I might mention several cases, of a similar description, but it would be tiresome and needless, the experience of other surgeons being capable, no doubt, of supplying many such. Yet it is not always that the issue is so flattering ; these cachectic ulcerations, whether of the tongue or of the tegument, being, in too many instances, uncertain, tedious, and obstinate. Cunctando vincere must be our motto, and it is necessary to wear *them* out, and build *the patient's constitution* up, by ringing the changes on tonics and tonic alteratives, to the exclusion, most religiously, of mercury.

Some apology is due for these desultory observations, but their clinical character may excuse their being found in a mere Report of Cases.

IV. PSORIASIS OF THE TONGUE.

This frequently coincides with the exanthematous mercurial or venereal eruption, with psoriasis guttata of the same character, with condylomatous ulcers of the genitals, which may, however, have only preceded it and disappeared—and, it not unfrequently, exists or survives as an isolated symptom.

The appearance of the tongue varies, in no important degree, from some such standard as this. It has a patchy aspect—spots of the circumference of a pea, or much larger, are red, smooth, shiny, and evidently denuded of epithelium, or having the latter much attenuated. In other parts, there are opaque white patches, varying in number, disposed to be circular, and looking not unlike portions of wax, which had dropped on the tongue in a melted state, and coagulated. The tongue itself is generally sore, sometimes fissured, particularly in the median line, and occasionally swollen, indented by the teeth, reddish, irritable-looking and inflamed. But this latter condition is comparatively rare.

There may, withal, be whitish ulceration of the throat, such as I have described in connexion with ulcerated condyloma,*—or a similarly opaque condition of the epithelium of the palate, and, there may be the several cutaneous complications which I have already mentioned.

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* Vide Medico-Chirurgical Review—Cyclopædia of Practical Surgery, Art. *Condyloma.*

The patient's health is rarely *bad*, is sometimes excellent, but is commonly indifferent. The previous history of the case varies. In the majority of instances, as I apprehend, it will be found that he has taken a good deal of mercury, and a mercurial affection I believe it, in most cases, to be. In others, we shall find a precursory sore, or condylomata, and nothing which can justify the suspicion of excess of mercury.

The affection, whatever its cause may have been, is too apt to be protracted. The patient gets better, seems well, and is attacked again and again. This, I would say, is peculiarly the case, where a mercurial cause is assignable, and I make a point of warning him of the probable tediousness of his disorder.

The treatment must be materially regulated by the history. If there has already been much mercury taken, I would most earnestly advise that no more should be given.

Sarsaparilla and the iodide of potassium appear to be, on the whole, the most efficient remedies, but change is as necessary for this as for the cachectic affection, and the object to be kept steadily in view, whatever measures are employed, is to sustain the general health. The ammonio-citrate, or the iodide of iron, I have found very serviceable here.

As a local application, none is comparable to the lunar caustic. The opaque spots upon the tongue may be touched with it twice or three times in the week. If the palate is affected it may be treated in the same manner, or painted with a strong solution of the same salt. The gargle of the bichloride of mercury, one grain to six ounces of water, or that of the sulphate of zinc, have their merits, and in fact, many slightly stimulating applications are of use.

As an instance of the bad consequences of much mercury in this affection, I may advert to the following case.

It is some seven or eight years since I first saw the gentleman, the subject of it. He had then "psoriasis" of the tongue, and an exanthematous efflorescence pretty generally on the body. He was about 22 years of age, stout, robust, and with every evidence of a good constitution. He stated that about two years previously, while reading in the long vacation, (he was studying at Oxford,) he contracted what he supposed was a venereal sore. The gentleman whom he consulted assured him it was not, and for two months, while he continued under his care, he took no mercury whatever. At the end of that time he went to Oxford. The sore was then healed, but the cicatrix was extremely hard. The surgeon whom he consulted prescribed twenty-five grains of blue-pill daily, which he continued to take for seven weeks. The hardness of the cicatrix disappeared, his mouth was not made sore, and he appeared to be cured. But soon the throat grew sore, and a rash broke out upon the skin. For this he had advice in town, and again took mercury along with sarsaparilla. Prior to my seeing him he had had several such courses by the recommendation of various medical men. The rash would disappear for a time, and without apparent cause return.

I endeavoured to dissuade him from resorting to further mercurial treatment, and prescribed sarsaparilla, the mineral acids, and so forth. But my patient was difficult to be controlled, and indulged in excesses, more particularly in drinking, against which cautions were vain. He disregarded, also, my injunctions with respect to mercury, and, with the sanction of others, underwent one or two courses more. Yet, after two or three years spent thus, he seemed, at last, to be well, and no further eruption occurred on the skin, nor did aught seem amiss with the tongue or throat. So he continued for two or three years, when, without any warning, one lachrymal bone grew carious. Ulcerations of the Schneiderian membrane followed, and the bony septum of the nose in its anterior part was destroyed. Then came caries and exfoliation of the palatine plate of the palate-bone, and the disease is still going on in the nose, without any prospect of speedy or permanent recovery.

It would be difficult, I conceive, to exonerate mercury from the blame of what happened in this case, though the patient's own excesses in other ways, contributed to aggravate the mischief.

V. SMALL SCIRRHOUS-LIKE TUMOR OF THE FRÆNUM LINGUÆ IN A CHILD.

Frederick Pigott, aged 13 months, was brought to me by his mother, on account of a tumor beneath his tongue, interfering with articulation and with eating.

The tumor occupied the frænum, was attached to, or rather blended with, the gum below, and reached to the tongue, with which it was not blended, above. It was bigger than a horse-bean, of irregular shape, ulcerated upon the superficies, with everted edges, hard to the feel, and in appearance not very unlike scirrhus. But the child was healthy, and there was no contamination of the lymphatic glands.

The mother had noticed it two months previously, just before he cut his central incisors. It began as a white speck, which had gradually increased up to its described dimensions.

In the course of a few days, I removed the tumor with the ligature, this being preferable to the knife on account of the ranine vessels. The only difficulty was occasioned by the young patient's refractoriness, but, by drawing out the tumor with a hook, the needle armed with a double ligature was passed, and the diseased part included in it. The slough separated; for security's sake, nitric acid was applied to the wound; this healed; and the child appears to be cured.

A case of RANULA presented itself. The patient was a girl, aged 13, the tumor was as large as a bantam's egg, of bluish colour, and evidently fluctuating. There was little impediment to speech or deglutition. The disease had existed for three months.

I passed a seton cross-ways through the ranula, and a quantity of glairy fluid escaped, the swelling subsiding much in consequence. I regret that I cannot report the result, the patient, soon afterwards, ceasing to attend.

VI. PUNCTURE SUCCEEDED BY BLISTERS FOR COLLECTION OF FLUID IN SUBCUTANEOUS BURSÆ.

In several cases of enlargement of the supra-patellar and supra-olecranal bursæ, from fluid connected within them, I have lately adopted the plan of first puncturing the sac with a grooved needle, and allowing the fluid to escape, and then applying blisters. The fluid forms again in the bursa, but is speedily absorbed, and it appears that time is gained by the proceeding. The two cases which follow are taken at hazard as samples.

Case 1.—Catherine New, aged 23, housemaid, applied July 12, 1843.

Right bursa patellæ as large as a duck's egg—sac thin—skin red and much distended—little inflammation. Pulse small and weak, health rather delicate.

Complaint has existed for fourteen months.

Puncture with grooved needle—much fluid let out. Emplast. lyttæ genu.

15th. No inflammation. Sac nearly filled. Blister just healed.

Rep. emp. lyttæ.

22nd. Effusion nearly gone.

Rep. emp. lyttæ.

After this there was no return of effusion, and some slight thickening of the

sac seemed to occur. A bandage and strapping were applied, and on the 5th of August, she was discharged cured.

Case 2.—Ann Neales, aged 22, servant, applied August 16, 1843.

Effusion into right bursa patellæ, of two months standing. Bursa of the size of a small egg. No inflammation.

Punctured. Emplast. lyttæ.

The effusion returned in a less degree, the blister continued open, and it was not before the 1st of September that a second was applied. The effusion was then gone, and this was only for precaution's sake.

On the 9th the knee was bandaged, and she was discharged cured.

Of the permanence of the cure in these cases, I have no experience. In some, I dare say, it will, and in some will not, succeed. For the patients are usually compelled to resume their laborious kneeling, which as it induced, may naturally be expected to restore the complaint. But this seems to me an improvement on the plan of *mere* blistering, the one generally resorted to.

In *subcutaneous* bursæ, it cannot be hazardous; indeed, I usually move the needle about, for the purpose of exciting inflammation. This, as in the case of hydrocele, may lead to adhesion of the walls of the sac, or tend to arrest the secretion of fluid in it.

VII. DIFFUSE INFLAMMATION OF THE DEEP CELLULAR MEMBRANE OF THE PELVIS.

The affection to which I would direct attention is not, I believe, very generally understood, at least in connexion with such cases as I shall allude to. The present notice is not intended to supply the deficiency, but rather to give a hint to surgeons, and to precede some more extended observations of my own.

The point to which I would advert at present, is the risk of inflammation of the cellular membrane of the pelvis from operations for hæmorrhoids or fistula, or even independently of any operation whatsoever. The general character and history of the affection may be briefly sketched as follows:—

Two or three days after the pile has been tied, or the sinus has been laid open, a rigor, more or less distinct, ushers in pyrexia, with its usual features, heat of skin, frequent pulse, thirst, perspirations, and impaired secretions. But the symptoms are of rather a low character, and there is an expression of anxiety, exceeding their apparent gravity. Along with the feverishness, there is pain complained of in the lower part of the abdomen, and more particularly, I would say, in the groin. This has seemed to me an early symptom, and it is always a suspicious one. All this while, there may be little to attract attention about the rectum or the wound, the latter, if any thing, exhibiting a tendency to dryness.

With the progress of the disorder, the rigors may or may not return, there may or many not be sickness, but there *is* a frequency of pulse which never fails,* and an anxiety of countenance which is never wanting. Some pain, too, persists in the belly. It is not limited to one spot—perhaps it may be greatest in the groin, but it may even reach to the diaphragm. Not, however, that the patient will complain very much of it—he may rather be disposed to make light of it.

Possibly, the inguinal glands may enlarge—they may even have done so at the first—the belly grows tympanitic—there is a disposition to sweats—perhaps

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* In my experience, a pulse *remaining* frequent after injuries or operations, is always a dangerous, though not, of necessity, a fatal symptom.

rigors alternate with them. So the case may go on for some days, a week, or even more. Then may come hurried respiration, slight cough, obscure pain in the thorax, low delirium, death. The patient is cut off by secondary pleuro-pneumonia or deposits.

Or the termination may be more sudden. With the tympanitis the depression increases, the tongue embrowns, there is delirium, and the patient dies unexpectedly.

The subject of such symptoms is commonly cachectic, one broken down by mercury or by spirit-drinking, or by some depressing agency. But, in other instances, we have not cachexia, but a highly nervous temperament to deal with—a hysterical female, rather spent in years, or a man whose mind has been severely taxed.

When we come to examine the body after death, we find (this is not necessary) some traces of recent peritoneal inflammation. It is not "adhesive inflammation" that we see—not lymph and agglutination of the coils of bowel; but diffused vascularity, and turbid serum, with dirty pus dissolved in it, or floceuli of lymph, and when such appearances are found, they are principally about the pelvis.

I said they were not necessary, nor are they. There may not exist the faintest trace of peritoneal inflammation. Be it there or not, it does not constitute the gist of the disease. That is in the sub-peritoneal cellular tissue. In that we find pus or concrete lymph, diffused perhaps to a great extent. We commence discovering it in the vicinity of the tied pile or divided sinus—thence it spreads along the rectum to the pelvis, behind the mesentery to the belly, up to the kidneys, to the diaphragm. It does not, of necessity, go so far, that hinges on the case, but it is always found, and it palpably has its source about the rectum. It is, in short, diffuse inflammation and suppuration in the cellular membrane of the pelvis, spreading by continuity to the sub-peritoneal cellular tissue, and affecting by contiguity the serous membrane. That secondary inflammations of the pleura or the lung, or deposits any where, should under such circumstances occur, is no more than might naturally be expected.

On the treatment of this affection I have little to say. Whenever the symptoms that bode it have appeared, we must *dread* the worst result. Not that I believe this always follows; indeed I have little doubt that it does not. But it is very apt to follow, and the surgeon ought to be prepared for it. Incisions, our main hope in diffuse cellular inflammation elsewhere, are here out of the question. The mischief is beyond the knife. Moderate local depletion may be serviceable, active depletion is not. Support must probably go along with measures, calculated, like leeches and blisters, to keep down local action. The diffused character of the inflammation and effusion forbids on the one hand lowering remedies, and gives little encouragement to anticipate benefit from any.

Perhaps, the best lesson we can draw from an acquaintance with the affection is this—to be chary of operating on such persons as likely subjects for it—and to sustain, by diet and by other means, those on whom we do operate.

Spirit of the British and American Periodicals.

KILL OR CURE.

THE following Case, recently published by Mr. Hastings, will shew the fine effects of sudden cures by Hydropathy.

"*A Case of Gout, in which the Water-Cure was followed by Diseased Heart, Dropsy, and Death. By* CHARLES HASTINGS, M.D. F.G.S.

"There exists no doubt in my mind that one great cause of the spurious celebrity of the Silesian peasant, Priessnitz, is that he has cunningly succeeded in turning the love of the marvellous, which is known to be a principle inherent in the human breast, to his own selfish ends. Every unprejudiced account which we receive from Grafenburgh confirms this opinion, by shewing that there is little faith to be placed in the reputed cures there performed.

"The cures said to be effected by the Hydropathists are as wonderful as those of Prince Hohenloe, and somewhat of the same faith which distinguished his disciples animates the hydro-maniacs.

"Dr. Pfeufer, directing physician of the Universal Hospital at Bamberg, thus describes the scene of operation of this princely priest, and the rush of the infatuated sufferers from disease to his presence :—'Let us then (he says) imagine thousands and thousands of human beings under such circumstances, to each of whom every day brings new sufferings, new despondence, and who have but one wish remaining—release by death from their nameless pangs. Electrified by the news that at Bamberg and Würzburg there is help and salvation for them through the grace of God, a new life glows within them, and already they feel the term of their misery. With the same longing as that of the leper for the pool of Bethesda, they hurry to the place where all grief vanishes, and where the stream of health and deliverance flows. In ever increasing expectation, and with breasts full of hope, wholly occupied in anticipating the enjoyment of re-established health, dead to every other thought, they approach the scene of healing grace. At every step are announced to them the great wonders that take place there every minute. Scarcely arrived at the place of deliverance, they throw themselves at the foot of the altar, confess their sins, and, reconciled and united with God, hasten to the chosen priest. All the streets they find filled; with great trouble and anxious palpitation they reach their desired residence. Some one carries on his back an old woman into the house; she has been, says report, from her childhood crooked, and unable to stand or walk. A few minutes pass away, the door of the Prince's dwelling opens, and the same woman walks without support out of the house, thanking and praising the Lord God. Every one presses around her; each one will with his own eyes, and from herself, learn what has happened to her. Man lives for the present time; of the past nobody has time to think; no one, therefore, concerns himself about the former situation of the person cured. Often, also, he who is not lucky enough to see or speak with her, still asserts, in order to please the crowd, and to appear of some consequence, that, with his own eyes and ears, he has convinced himself. For who is not gratified at being the bearer of wonderful news! And now, in an incredibly short time, the new miracle spreads through town and country; each narrator vies with the other. If the cured person limped at first, he is soon dead lame, and soon after sees him struggling with death; and the story becomes

more interesting, and the narrator more consequential in proportion, as he is more skilful in tale-telling.'*

"It is not impossible that the system here described may take place in a greater or less degree in the hydropathic establishments in these kingdoms. Patients who have scarcely any real illness may be puffed off as having been released from grievous suffering; and if, perchance, any persons are just temporarily bettered by the aid of hope, imagination, and pure air, these cases may be magnified into important cures, and the future history of the invalid may be wholly lost sight of. Such, at least as far as I have had an opportunity of judging, has been the system pursued by the Malvern water-doctor. He has given to the world, through the medium of the press, as I am credibly informed, several important cures wrought at this salubrious village by the efficacy of the system of Priessnitz. One of these *cures* has happened to fall under my immediate observation, and, as I am desirous that *the truth, the whole truth, and nothing but the truth*, should be published concerning hydropathy, I will narrate the history of it.

"Mr. Probert, aged sixty-five, called upon me on the 11th of February, 1843. He told me that he had been for several years subject to attacks of gout, but in the intervals had been in tolerable health. He further stated, that he was attacked severely with gout the beginning of January, 1842, and remained ill with it for several months; but that in the month of July he was slowly recovering, and was enabled to get about a little. Some time in that month the water-doctor, who had lately arrived at Malvern, called upon him, and said that he could cure him in a fortnight, and, if he did not succeed, he would forfeit one hundred pounds. The poor fellow was delighted with the prospect of restoration to health, which had been denied to him for so many years, and, after a little consideration, consented to submit to the treatment. He was accordingly put under the feather bed and blankets for an hour or two, and when the perspiration came on he jumped into a cold shallow bath, and remained in it five minutes, and then walked about and drank water. This he did every day for six weeks. After this the gout left him, and he has not had it since; but his breath, which had been indifferent for several months previously, has ever since been much worse, and within the last two months has been so bad that he can scarcely move about. Within the last week his legs have swollen, and he is not able to lie down at night.

"The action of the heart is much diffused, and the impulse is great, with a *bruit*.

"I directed him to have a dozen leeches applied to the region of the heart, and afterwards a blister to the same part. He had also to take a pill of calomel, digitalis, and squill, three times a day.

"On the 20th of March I again saw him, and the dropsical symptoms had disappeared, and he was rather better. As, however, the disease did not materially decline, he was, early in April, received into the Worcester Infirmary, and was then affected with general anasarca, urgent dyspnœa, and tumultuous action of the heart.

"He obtained some relief from active doses of elaterium, but did not on the whole derive much benefit, and, as it was evident that the mischief which had been produced in the chest could not be removed by medicines, he was discharged from the infirmary.

"After this he fell under the care of Mr. Addison, of Malvern, where he died in the month of June. Mr. Addison thus writes, in transmitting to me the report of the post-mortem examination:—

"'I visited Probert several times before his death, and found him suffering

* "Ed. Med. and Surg. Journ. Vol. XXV, p. 275."

greatly from general dropsy. His extremities were much swollen, and his respiration very difficult; he could not lie down, and during the last two or three days of his illness he was attacked with violent spasmodic paroxysms in the muscles of the arms, legs, and face, during which he cried out loudly from the acuteness of the pain. I do not remember to have ever witnessed so much suffering from spasms of this kind in cases of a similar description. I examined the body after death.

"'The cellular membrane was everywhere distended with a yellow serous fluid.

"'The lungs were crepitant, and the sections which I made, swam in water, still the tissue was at all points loaded with a serous fluid.

"'The liver was not enlarged, but it was very pale and indurated. There was no great quantity of fluid in the abdomen, and the rest of the viscera in this region appeared healthy.

"'The heart was nearly double the normal standard for persons of Probert's size, and the walls were in some degree hypertrophied. I examined this organ minutely, but I could not discover any ossific deposit in any portion of its structures, but there were several patches of coagulable lymph or fibrinous exudation, on the surface. The pericardium contained more than a pint and a half of serum.

"'*June 28th*, 1843.' 'WILLIAM ADDISON.'

"*Remarks.*—The cure of gout by the water system is not novel. It has been repeatedly tried at different epochs of medical science, but has never, for any length of time, been enabled to maintain its credit as a *safe* mode of treatment. Within our own time, Dr. Kinglake attempted to bring this treatment forward as eminently successful. Serious and even fatal results were found occasionally to follow its adoption, and his plan never received the sanction of the profession. Gout is a disease of so migratory nature, and yet so essentially constitutional, that you can never say, when it disappears in one part of the system, whether it may not show itself in some other organ. It is well known that, in some broken down constitutions, gout is never altogether absent from the system; and experience has taught us that in such cases the functions of the vital organs are better performed whilst the gouty action is showing itself in the extremities, and there is nothing in such a state of system which a prudent physician so much dreads as the sudden and entire disappearance of gout from the extremities. Probert's was just such a case. He had been an ailing man for years, and had been occasionally subject to attacks of gout in the limbs, which he considered were always followed by an improved state of general health. What does the water-doctor do in such a case? He comes and proffers his assistance, and actually forces his nostrum on the poor, unhappy sufferer! The gout, in consequence, disappears from the joints, and from that time forward his breath becomes affected. The gouty action is driven from the extremities, but it fixes on the tissue of the heart and pericardium, from whence it cannot afterwards be dislodged, and death at length releases him from suffering.

"Dr. James Johnson, in writing on this subject, justly observes, 'There are certain classes of maladies—for instance, gout, rheumatism, rheumatic gout, tic douloureux, &c.—which, though thoroughly constitutional, and whose *causes* have been years accumulating, are yet of a migratory nature, suddenly shifting their seat from a vital to an unimportant organ, and *vice versâ*, from a foot or a wrist to the stomach or heart. Now, it is an undoubted fact, that when a translation or metastasis of a chronic or subacute affection, as of gout or rheumatism, suddenly takes place from the exterior of the body, whether spontaneously or from the force of medicine, the malady takes up its seat in some internal organ; but as the internal organs—as the heart, liver, brain, &c.—are not naturally sensitive of pain, the metastasis is very often taken for a cure, and the malady preys

for a long time on the vital part, without suspicion, until it reaches a certain height, when the disease reveals itself unequivocally, by pain and suffering, but is now totally beyond the power of art. Nature will not be cozened by the ingenuity of man. For a long time she counteracts the deleterious effects of morbific causes, whether applied by ourselves, or unavoidably occurring, and guards vital organs by throwing the onus on external parts, as is familiarly exemplified by gout. But when we thwart these salutary efforts of Dame Nature, by violently repelling the pain, inflammation, stiffness, or swelling from the hands and feet, by cold applications, heroic doses of colchicum, &c., then we lay the foundation, directly or remotely, for serious or even fatal maladies of some of the internal viscera! In this drama HYDROPATHY is now playing an important part, and we are now almost in the daily habit of seeing the precious fruits of the 'water-cure' in the shapes of furuncles, carbuncles, dropsy, and hypertrophy of the heart,' &c.

"Further comment on the case of Probert seems unnecessary; but I may point out to the reader that this victim of the rash and absurd water-system had been known at Malvern as a gouty subject for several years, and there appeared, on the arrival of the water-doctor, no reason why he might not have continued in the same condition for as many more, if it had not, unfortunately for him, so turned out that the disciples of the Silesian peasant determined on making him one of their victims; but, instead of prolonging his days to upwards of one hundred years, which their system promised, they forced him to shuffle off his mortal coil in a few months, and made the grave his resting-place.

Worcester, July 22, 1843."

AN ATTEMPT TO DETERMINE THE INFLUENCE ON THE SEASONS AND WEATHER ON SICKNESS AND MORTALITY. By WILLIAM AUGUSTUS GUY, M.B.*

This enquiry, Dr. Guy states, was suggested by a striking coincidence observed in the recently-published Report of the King's College for 1842, between the prevalence of sickness in the several seasons and the temperature.

"A desire to ascertain whether these were mere coincidences, or the general rule of sickness and mortality, prompted an examination of the records of sickness and mortality in past years; and the results of this examination are embodied in the present communication."

The enquiry consists of two parts. 1. As to the relation between the seasons and weather, and the sickness and mortality, during the year 1842; based upon the registrar-general's tables of mortality for the metropolis for that year, and the cases registered in the out-patients' books of the King's College Hospital for the same year. The standard of comparison employed is the meteorological table, deduced from observations made at the apartments of the Royal Society, and appended to the Registrar-general's report already mentioned. 2. A comparison of the results obtained for 1842 with those of former years.

We have not space enough to go through the valuable and interesting series of tables, &c. given by Dr. Guy; the following, however, are the conclusions which he draws.

"1. The amount of sickness in the central districts of London during the year 1842 varied directly as the temperature, being a maximum in August, the hottest month in the year, and a minimum in January, the coldest month.

2. The diseases which determined the order of sickness were febrile and

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* From the Quarterly Journal of the Statistical Society.

catarrhal affections, the contagious exanthemata, and the disorders of the digestive organs; to which may be added the mixed group, consisting of gout, scrofula, &c.

3. The diseases of the organs of respiration followed the inverse order of those already mentioned, and were inversely as the temperature, being most numerous in the colder, and fewest in the hotter months.

4. The temperature did not appear to exercise a marked influence on the other classes of disease.*

5. The hygrometric state of the air appeared to have little effect on disease, and if it produced any effect, it was on the diseases of the organs of respiration, which were in excess during the months in which the quantity of moisture in the air was the greatest; but these were also the coldest months.

6. The mortality for the metropolis during the year 1842, was greatest in the first quarter, and least in the second, and was inversely as the sickness, except that the mortality of the third quarter exceeded that of the fourth.

7. The diseases which chiefly influenced the order of the quarters in respect of mortality, were those of the chest, to which may be added, as following the same order, the decay of nature in the aged.†

8. The order of the seasons in respect of sickness and mortality differs year by year, and does not admit of being reduced to any precise rule.

9. As a general rule, but one admitting of many exceptions, it may be stated, that the amount of sickness tends to vary directly, and the amount of mortality inversely as the temperature."

These results, though probably not very far from the truth, are based on too few facts to be certainly depended upon. In the course of the inquiry the following is the hypothesis which Dr. Guy was led to form.

The causes of sickness are two-fold, consisting of atmospheric changes which may be submitted to measurement, and of certain more subtle changes in the composition of the air, which at present can neither be analysed nor estimated. To the former class belong the temperature, moisture, and pressure of the air; to the latter those emanations from the earth or from human beings themselves, which give rise to the majority of epidemic, endemic, and contagious diseases. As the number of cases of sickness produced by these latter causes is generally considerable, the influence of the pressure, temperature, and hygrometric state of the air will not be observed in those years in which these causes are in operation; but in the absence of epidemics, the temperature will be found to be the most influential cause of sickness. When the temperature of the Summer is high, there will be such an amount of sickness in the Summer-months as to cause a large return of sickness for the entire year; so, on the other hand, a severe Winter will swell the total sickness of the year, by producing a great excess of affections of the organs of respiration. A Summer or Winter of unusual length, beginning early and ending late, will also cause an increase of sickness on the entire year, but the nature of the sickness will be different as the temperature is higher or lower than usual. The order of the seasons in respect of sickness will also be mainly determined by the degree in which the temperature of these seasons exceeds, or falls short of, the average temperature.

The mortality in like manner, in non-epidemic years, will be chiefly dependent upon the temperature, varying in the several seasons inversely as the tem-

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* With the exception perhaps of those which form a measure of the activity of the sexual passion, which were in excess during the hottest months of the year—a fact which corresponds with, and corroborates our experience of the influence of the seasons on crimes against the person, &c.

† It is well known that the most common cause of death in the aged, is an affection of the lungs, called "bronchitis senilis."

perature, except in those years in which the Summer is unusually warm, when the mortality of the Summer may even exceed that of the Winter season. In other instances the mortality of the Summer months will rank next to that of the Winter or Autumn.

ROYAL INSTITUTION—ELECTRICITY OF STEAM.

At the last evening meeting for the season, Professor Faraday communicated the result of his recent investigations connected with the electricity of steam. He stated, that attention was first directed to this subject in consequence of a mechanic, engaged in attending on a high-pressure steam-engine, having observed a spark to pass from the boiler to his hand while doing something to the valve. The man, with much alarm, reported that the boiler was full of fire; it was found, however, to be highly charged with electricity. Since then, several papers have been published on the subject by Mr. Armstrong, of Newcastle, in the *Philosophical Magazine*. It had been thought probable that it would afford some explanation of the origin of thunder-storms, the electricity being supposed to be produced, in both cases, by the evaporation of water. In confirmation of this view, the fact, which had been long observed, was adduced, that electricity was produced on the sudden evolution of steam caused by dropping water into a crucible heated nearly to redness. Mr. Faraday showed, however, that this effect resulted only under peculiar circumstances, and he said the experiments he was about to perform, entirely overthrew the supposed connexion between the electricity of steam and that of the atmosphere. His experiments were made with a small, high-pressure steam-engine, isolated from the ground by blocks of shellac. From this boiler the steam issued through a pipe, at the end of which was a spherical enlargement or globe, and beyond this a wooden tube with a small perforation. The pipe was furnished with a stop-cock between the globe and the boiler; and water was put into the globe up to the level of the pipe and wooden exit tube. On turning the stop-cock, the steam, passing over the surface of the water contained in the globe, escaped through the wooden tube, and the development of electricity was immediately manifested by a gold-leaf electroscope, connected with the boiler by means of a wire. The boiler was now found to be sufficiently charged with electricity to ignite hydrogen gas or gunpowder; and Mr. Faraday said, that Mr. Armstrong, in experimenting with a large and powerful boiler at a very high pressure, had obtained sparks through a space of twelve inches, the intensity being much greater than they could produce with the most powerful electrical machine belonging to that institution. The wooden exit-tube being now removed, and the steam allowed to escape immediately from the globe, through a large opening, no indication of electricity was afforded by the electroscope, although in other respects the arrangements remained the same as before; thus affording evidence that the phenomenon did not arise merely from the evaporation of water. The question then arose—did it depend upon the friction of the steam against the exit-tube? This question was answered by the facts, that if the water was removed from the globe, and the whole course of the pipe allowed to become so hot that no water was deposited from condensation, the steam might be allowed to escape through the wooden exit-tube as before, without the development of any electricity. It thus became evident that neither the evaporation of water, nor the friction of steam, was the cause of the phenomenon in question; but that it arose from the friction of water carried with force through the wooden tube during the exit of the steam. It further appeared that the water, to produce the effect, must be in a state of purity; its contamination with a very small quantity of a salt, such as sulphate of soda, or chloride of sodium, entirely prevented the production of

electricity. This was shown by dissolving a small fragment of sulphate of soda in the water contained in the globe, when the electroscope ceased to be affected; and even common river-water contained enough impurity to produce the same result.

Several experiments were performed to shew the kind of electricity produced under different circumstances. In operating as above described, the boiler was found to be charged with negative electricity; on introducing a few drops of oil of turpentine into the globe containing the water, positive electricity was obtained. In like manner, the steam, after issuing from the exit-tube, was found to be charged with electricity, and this was either positive, negative, or neutral, according to the distance from the extremity of the tube.—*Pharmaceutical Journal.*

On some Preparations of Balsam of Copaiva. By Mr. Jacob Bell.*

Among several preparations of this medicine, Mr. Bell mentions the following.

When balsam of copaiva is boiled with liquor potassæ, the mixture separates into two portions, a white oily substance or emulsion, which floats on a yellowish clear liquid. After standing for a day or two, the upper stratum becomes quite clear, the potash being thrown down, and the residue consisting of essential oil. The clear liquid is a solution of the resin in combination with potash. When evaporated to dryness, it assumes the character of the soluble resin. Caustic soda may be subsituted for potash.

This liquid is supposed to contain the most active and efficacious portion of the balsam. A small quantity of sweet spirit of nitre is added to it in order to increase the effect.

The following proportions have been found to answer very well. A mixture thus prepared is much less nauseous than the balsam; a desert-spoonful of it may be taken twice or three times a day:—

Balsam of copaiva, two parts.
Liquor potassæ (or sodæ) three parts.
Distilled water, seven parts.

Boil for a quarter of an hour, then add—

Sweet spirits of nitre, one part.

Allow it to stand a few hours, then draw off the clear liquid by means of an orifice in the lower part of the vessel.

This, the alkaline solution of copaiva, Mr. Bell considers as in some respects the least objectionable of all the preparations which he has named. Being deprived of the essential oil which is generally considered to be the most irritating principle, it is mild in its action, and it is less nauseous than the other mixtures on account of the perfect union of the alkali with the resin.

State of the Pupil in Injuries affecting the Brain.

In a clinical lecture on an interesting case of fractured skull with depression of bone, published in the Medical Gazette, Mr. Solly remarks:—

"In the examination of a case of this kind, then, it is extremely important for you to enter minutely into all those signs which indicate any injury to the brain. First, the mental condition—this was perfectly normal; he was quite

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* Pharmaceutical Journal.

sensible and his manner natural. Next, the state of the pupils—the iris is placed before that expanded surface of the optic nerve, the retina, as an intelligent curtain to guard it from injury. The vital contrivances by which it acts, and by which its action is directed, are so beautifully perfect, that the extent of the opening of the curtain is indicative of the state of the nervous apparatus it is destined to protect, by preventing such an amount of light impinging upon it as would be liable to injure it. In disease of the globe of the eye, the dilated pupil indicates more or less pressure on the retina by some cause in the globe itself, such as a permanently turgid choroid, &c. But if with a healthy eye, but in connexion with a blow on the head, we find a dilated pupil, then we have a sign of some pressure on, or injury to, the nerve in its course within the skull, or the ganglia in which it terminates.

"The dilated pupil, then, indicates very serious injury to the optic nerve, or the nervous centres with which it is connected, though it may happen that, as in the case of very severe concussion, the injury is remediable. The contracted pupil, on the contrary, indicates an irritability of the nervous instruments, an undue excitement of their natural function, not an obliteration of it. You will sometimes see, in the case of injury of the brain, dilatation of one pupil and contraction of the other; where this is the case, you will find the most severe injury of the brain on the side opposite the dilated pupil."

HOW TO MAKE LEECHES BITE.

The leech, which it is intended to apply, is to be thrown into a saucer containing fresh beer, and is to be left there till it begins to be quite lively. When it has moved about in the vessel for a few moments, it is to be quickly taken out and applied. This method will rarely disappoint expectation, and even dull leeches, and those which have been used not long before, will do their duty. It will be seen with astonishment how quickly they will bite.—*Med. Gazette from Weitenweber's Beitr.*

REMEDY FOR TOOTH-ACHE.

The *Nepeta cataria* of Linnæus is recommended by Dr. Guastammachia as a sovereign remedy for tooth-ache, whether it proceeds from catching cold or from caries. The leaves of the plant are to be placed between the affected tooth and the opposite one; this causes a copious flow of saliva, and in two or three minutes the more violent pains are relieved. If the patient cannot keep the leaves in contact with the diseased tooth, he must chew them, and the object is equally attained by the flow of saliva thus excited.—*Med. Gazette, from Filiatre Sebezio.*

ON THE USE OF THE TINCTURE OF IODINE AS AN INJECTION, IN FISTULA ANI. By CHARLES CLAY, M.D.*

After adverting to the beneficial results attending the iodine injection in cases of hydrocele, Dr. Clay mentions a case of fistula in ano, in which he was induced to try the effect of injecting the strong tincture of iodine through the canal of the fistula. The operation was followed by severe pain for a few minutes, with

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* Medical Times.

a less degree of smarting, itching pain, for two or three hours after. On the second day the injections were repeated, the pain produced was equally severe with the first day. After this, the iodine was employed every other day for seven times, when the canal was found perfectly closed throughout, and its mouth entirely healed; no other treatment was adopted, except a little aperient medicine occasionally.

"To give iodine injections a fair chance of success," Dr. Clay observes, "they should be well thrown up by a good powerful syringe, (made of glass, as the iodine affects the metallic ones,) and the operator should be convinced that the fluid reaches the whole length of the canal, which in order to ascertain, he should, for the first and the second dressing, wrap a little lint or tow round a bougie, and pass it up the rectum before using the injection, when, if the fluid is conveyed properly, a portion will stain the lint on the bougie. In the case given above, the tincture could not be detected in the rectum after the second dressing. The result of this case was highly satisfactory, and gives room to hope that iodine injections will not only become highly valuable in promoting that peculiar inflammatory action, by which means the exhalants in the serous cavities are effectually obliterated and prevented from pouring out the secretions into those cavities, but also as equally valuable in closing up fistulæ, as in the case just recited. In fistulæ, however, the injection is required to be much stronger. I use the tincture full strength"

Remedy for Cough.

The abrupt violation of the decencies of social existence is one of the most annoying consequences of coughing and sneezing. If you happen to have a catarrh, and are not endowed with sufficiently strong powers of mind to be able to resist a paroxysm of coughing, place the end of your fore-finger upon the end of your nose, if you have a nose. In the absence of this central organ, rub your eyes as if you had been magnetized, and look at your watch. If the fit of coughing does not pass off, you will at least pass for an accomplished gentleman. —*Diday.*

Action of Weak Acids on Copper Vessels Plated by the Electrotype Process.

Mr. Warrington, in a late number of the *Chemical Gazette*, asserts that copper-vessels, such as saucepans, extract-pans, &c. silvered by the electrotype process, are acted upon by weak acids, as lemon juice or vinegar, if allowed to remain in them for a short time. This, he says, must arise from the deposited silver being so porous as to allow the acids to permeate its substance, and the action is most likely assisted by the formation of a galvanic current.

Observations and Researches upon a New Solvent for Stone in the Bladder. By *Alexander Ure*, M.D.*

Mr. Ure states that, in pursuing some inquiries relative to the treatment of certain forms of urinary disease, his attention was directed to the properties of car-

* Pharmaceutical Journal.

bonate of lithia, a substance of which no therapeutic application has been heretofore made. It occurs, nevertheless, as a constituent of various mineral waters, some of which have been found of service in certain unhealthy conditions of the urinary organs.

Carbonate of lithia dissolves in water at the ordinary temperature (60°) to the amount of one per cent. It possesses a faintly alkaline, by no means unpleasant taste. It has a remarkable affinity for uric acid; according to M. Lipowitz, one part of carbonate of lithia dissolved in water, and boiled along with an excess of uric acid, dissolves four parts of the latter, which are held in solution after cooling. Urate of lithia is, indeed, the most soluble salt which that acid forms.

In order to determine the solvent powers of carbonate of lithia, with reference to uric acid and its compounds, at the common temperature of the human body, Mr. Ure instituted several experiments.

On adding pure uric acid to a solution of one grain of carbonate of lithia in an ounce of water, at the temperature of 98°, the quantity taken up was found to be 2.3 grains. Hence it appears that the solvent power of carbonate of lithia is more than double that of carbonate of soda; nearly double that of carbonate of potash or borax; and about eight times that of bi-carbonate of soda, which is the active ingredient of the Vichy water.

After keeping a human urinary calculus, consisting of uric acid with alternate layers of oxalate of lime, in a solution of four grains of carbonate of lithia in an ounce of water at the temperature of 98°, for five hours, it was found to have lost five grains of weight, being at the rate of one grain an hour. The calculus was deeply eroded in different parts, but the delicate laminæ of oxalate of lime remained intact, imparting to the surface the appearance of deep etching. The menstruum acquired a pale yellow tinge, and there fell down from it on cooling, a light flocculent deposit of urate of lithia, in which silky crystalline tufts could be distinguished by help of the microscope. It was still alkaline to litmus.

It deserves notice, that when fresh healthy urine is rendered alkaline by carbonate of lithia, no deposition ensues.

"A very large proportion," Mr. Ure observes, "of the stones which occur in the urinary bladder of man, are composed in whole or in part of uric acid. Of all the various menstrua hitherto recommended, none appears to promise more favourably than the carbonate of lithia, from the promptitude and energy with which in dilute solution it attacks calculi of this description. If by means of injection we can reduce a stone at the rate of a grain or more an hour, as the above experiment would lead us to anticipate, we shall not merely diminish the positive bulk of the calculus, but farther loosen its cohesion, disintegrate it, so to speak, causing it to be washed away in the stream of the urine. Cases may present themselves in which it may be expedient to conjoin the use of the lithontriptor; but only occasionally and at long intervals. It is the frequency of repetition which renders that instrument so hazardous.

"It may be presumed, moreover, that the plan of throwing in a weak solution of this kind, would generally exercise a beneficial influence in obviating irritation, by removing the sharp angular points and asperities of the broken fragments, where the practice of crushing is adopted."

Mr. Ure has been prevented from trying the carbonate of lithia, by its extreme scarcity.

It appears, however, that the mineral called *spodumene*, which is found at Killiney, near Dublin, contains, according to Stromeyer's analysis, 5.6 per cent. of lithia, so that the carbonate might be obtained without much difficulty, if a demand should arise for it.

On the Treatment of Gonorrhœa, by Superficial Cauterization of the Urethra. By G. B. Childs, Esq.*

After some observations upon the prejudices which exist in the medical profession against "bold practitioners," Mr. Childs explains his mode of treating gonorrhœa at its commencement, when pain and inflammation are present, attended with discharge.

"Immediately a patient applies to me, I introduce an instrument, a modification of Lallemand's caustic-holder, smeared with oil, carrying it as far back the passage as from the symptoms may be deemed expedient. The caustic being exposed by pressing the stilet forward, the button at its extremity must be rapidly rotated between the thumb and fore-finger of the right hand, in order that no part of the mucous lining may be left in tact, whilst the instrument is at the same time gradually withdrawn from the passage.

"In a few hours, a considerable degree of inflammation comes on, and in some instances slight bleedings, but these symptoms are but temporary, and subsiding leave the membrane almost free from discharge.

"In most cases of gonorrhœa the inflammation does not extend beyond three or four inches from the orifice of the urethra; this was called by Mr. Hunter its specific extent; further back than this, therefore, the instrument need not generally be passed.

"One application of the caustic I have sometimes found to destroy the virulence of the disease; but when, after the irritation attending the first application has subsided, any discharge remains, we should again resort to its employment. Whilst pursuing this treatment internal revulsives are to be administered in the form of copaiba and cubebs combined, and the penis is to be enveloped in a cold saturnine lotion.

"With such means as these we shall rarely fail to check the disease in a few days; an assertion I could easily corroborate by the recital of cases, did I feel it might be requisite so to do."

Mr. Childs disposes summarily of any objection to this plan on the grounds of the chance of stricture or epididymitis ensuing, by asserting that the chances of these affections are considerably less the earlier we destroy the specific inflammation attending gonorrhœa.

"The first and most important indication in the treatment of gonorrhœal urethritis is to make such an impression on the inflamed vessels as shall change the original character of the disease, and substitute, in its stead, simple common inflammation of a sufficient extent to overcome the diseased action: and I feel assured, nothing can so effectually induce this as superficial cauterisation."

Evil Consequences of the too early Application of the Starched Bandage in a Case of Simple Fracture of the Fore-arm. By D. M'Cash, Esq.†

Some time since, Mr. M'Cash was called upon to visit a boy twelve years of age, who had just sustained a fracture of both bones of the fore-arm, about mid-way between the wrist and elbow. Unfortunately, the author was fresh from reading some glowing accounts by Velpeau of the successful application of *la bandage immobile*, in cases of simple fracture newly contracted, and, pleased with the nature of the details, resolved on giving it a fair trial in the first suitable case that should

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* Medical Gazette, July 28.

† Medical Gazette, July 21.

present itself. Accordingly the arm was at once encased within the folds of the starched bandage. All appeared to go on well, but the following proved to be the state of the parts some time after the apparatus had been removed.

"The fracture was firmly united, and the callous was nearly all absorbed. The fleshy part of the arm unusually round and firm, conveying the impression, when handled, as if the muscles were all matted together. Flexion and extension, save to a very limited degree, quite destroyed. The wrist drooped over the end of the splint, and was beyond the control of the patient. The fingers were rigidly hooked upon the palm of the hand, and likewise defied all attempts on the part of the patient to make them straight. Sensation undiminished. Arm a little emaciated, and rendered totally useless as an organ of prehension. The tendons of the flexor muscles were prominent at the wrist, and resembled contracted cords passing on the hands."

It would appear that there were all the usual consequences of acute inflammation terminating short of the formation of pus; thickening and condensation of all the tissues; a copious deposition of organised lymph around and into the substance of the muscles; morbid adhesions of one part to another, with all the other changes due to the same cause, to which alone the loss of motion of the limb was attributable.

Mr. M'Cash concludes justly, that "no prudent surgeon should overlook the guidance of his own judgment in the promulgated advices of authors and inventors, however authoritative they may seem, as to resort to such constricting measures, in the treatment of fractures, as the starched bandages before the inflammatory period which succeeds every accident has gone over, and the parts have subsided into their due medium of action. Such is the proper period for deriving its full advantage, but to apply it before this time is to impose a control upon nature which she will not suffer, and consequences most prejudicial to the reputation of the surgeon are almost certain to ensue."

Three years have now elapsed since the occurrence of the accident, and the arm remains in the same unserviceable condition.

ON THE EFFECTS OF THE TER-CHLORIDE OF CARBON IN CANCER AND OTHER DISEASES. By E. W. TUSON, Esq.*

Mr. Tuson states that he has employed the ter-chloride of carbon for some time as a medicinal remedy, at the Middlesex Hospital. It was ordered at first as a local application, for a patient suffering under cancer of the breast; one drachm of the ter-chloride was mixed with a pint of water; linen rags moistened in this lotion, were applied to the tumour. The effect was immediate relief from pain, and the fetor from the discharge was completely destroyed, the patient being comparatively comfortable. The medicine was then given internally, one drop in water three times a day. This dose was increased to two and then to three drops; the effect was sedative, producing sleep for twenty-four hours. The cancer soon afterwards sloughed, and considerable pieces came away; the surface left was irregular and excavated, having a healthy granulated appearance, with hardness, to a certain extent, round the surface.

The remedy was then applied to a large elevated cancer in the groin. It produced the same sedative effect, relieved the pain, produced sleep, and removed the fetor from the discharge. After the application had been used for some time, there arose an areolar inflammatory action around the tumour, of an erysipelatous

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* Lancet, July 15.

character; this extended in the first case to about two inches, in the other to four or five inches; the skin around was red, of a deeper colour towards the disease, pitting under pressure, and leaving a white mark for a second. As the redness increased, large veins became visible, passing in a radiated and tortuous direction from the disease to the surrounding healthy parts; the slough next took place, when all this appearance gradually diminished, and the surrounding parts became again in a healthy state. The same application was employed during these changes.

Mr. Tuson is of opinion that this chemical preparation has some peculiar effect in cancerous patients, and in some suffering from other diseases, acting as a powerful sedative; but when employed in some other cases it had no such sedative effect. The following are cases in which he has employed it advantageously.

In *gangrena senilis*, its local application was of great service; its antiseptic property was here very remarkable, for where it was used by a patient, the fetor being so great as almost to prevent people from approaching the bed, the smell was soon much diminished. It also relieved pain and produced sleep after opium had failed.

In *sloughing ulcers*, its local application is said to prevent the slough extending, and greatly assist in its removal, rendering the parts beneath of a healthy character, and, in cases accompanied with much pain, giving immediate relief.

In *uterine affections, carcinoma, scirrhus, ulcerated surfaces, with profuse discharge*, its use as an injection produced great benefit; where all other medicines had failed, this frequently proved a valuable remedy.

In *neuralgic affections*, its local and internal exhibition proved often of service. In some cases of severe sickness, dependent upon nervous irritability, after the usual remedies had failed, this occasionally gave relief. "It allays nervous irritability, removes anxiety of mind, invigorates and raises the spirits, and where patients have one day been in a state of complete misery, they have on the following one become happy and joyful from its effects."

The ter-chloride of carbon is a clear transparent fluid, smelling strongly of chlorine, as its name implies; it consists of three parts of chlorine and one of carbon; the dose from one to four drops in water two or three times a day; one to two drachms in a pint of water, as an injection or lotion.

EMPLASTRUM CERATI SAPONIS.

The following are the directions given for the preparation of this plaster in the *Pharmaceutical Journal*.

The addition of one part of ceratum saponis to two parts of emplastrum plumbi, forms a plaster which, on an emergency, might be used when emplastrum cerati saponis is ordered in a prescription, the article in question not being a preparation of the Pharmacopœia. But the most legitimate mode of reducing the cerate to the form of a plaster, is to continue the evaporation until all the vinegar is expelled. This method is adopted at the Army Laboratory, where the plaster is kept, not only spread as usual, but also in rolls like other plasters.

The following is the formula used at the Army Laboratory:—

Common vinegar (No. 24) . .	8 gallons, old measure.
White Castile soap	16 lbs.
Yellow wax	20 lbs.
Olive oil	32 lbs.
Litharge	32 lbs.

Boil the litharge with the vinegar almost to dryness; remove from the fire and add the soap, previously scraped or cut; replace on the fire, taking care to avoid

empyreuma: then add the wax and oil, melted and strained, and continue the evaporation, stirring constantly until the whole of the vinegar is expelled. The time required for completing the above quantity is three or four days.

The original recipe directed eight gallons of the residuum of distilled vinegar to be used instead of twenty-four gallons of common vinegar. The plaster thus prepared has a dark brown colour; but when the vinegar is used, and the plaster has been carefully made, its colour is not much darker than that of adhesive plaster. The emplastrum cerati saponis extensum, as usually sold, is coloured artificially with burnt sugar.

ON THE SENSIBILITY OF THE GLOTTIS AFTER THE PERFORMANCE OF TRACHEOTOMY. BY JOHN E. ERICHSEN, Esq.*

In the discussion which took place some time since at the Royal Medical and Chirurgical Society, on the highly interesting paper of Sir Benjamin Brodie, some discrepancy of opinion appeared to exist as to whether the sensibility of the glottis to the presence of a foreign body is diminished by an opening previously made in the trachea. Mr. Erichsen determined in consequence to institute some experiments on one of the lower animals, in order to arrive at some satisfactory conclusion on the subject.

The result of these experiments appears to be as follows:—In all the cases, whether the trachea had been previously opened or not, on irritating the larynx and glottis by means of a probe, attempts at coughing, violent spasmodic closure of the glottis, and convulsive action of the muscles of respiration and of the neck, were induced. But in those cases in which no opening into the trachea had been made, or, at least only one of such size as but just to admit the probe for the purpose of irritating the larynx, in addition to the effects above-mentioned, symptoms of incipient asphyxia speedily came on, produced by the spasmodic closure of the glottis arresting the respiratory changes, and thus occasioning the symptoms and sensations of impending suffocation.

Mr. Erichsen concludes, from these observations, that the existence of an opening in the trachea, sufficiently free to allow of respiration being carried on through it, or, indeed, complete division of that tube, does not materially, if at all, diminish the sensibility and contractility of the glottis. When a foreign body, therefore, accidentally introduced into the air-passages, escapes through the glottis without exciting spasmodic contraction of its muscles, or reflex movements in those of respiration generally, after an opening has been made in the trachea, it probably does so in the same accidental way that it entered; the sensitive parts through which it passes, being taken as it were by surprise, whilst the attention of the patient is directed to the artificial opening, or to the circumstances in which he is placed. It would probably be as difficult for a patient (whether his trachea were opened or not) to expel a foreign body through his glottis, if his attention were fixed upon that part whilst he made the attempt, as it would be for him *voluntarily* to introduce it into the air-passages through the same aperture. There is, however, this most important difference between the presence of a foreign body in the larynx, or at the glottis, before and after tracheotomy has been performed, that, although the sensations of local irritation, and the reflex movements consequent upon them, may in both instances be the same, yet danger from asphyxia can necessarily only occur in those cases in which the glottis is the sole aperture, through which the respiration can be carried on.

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* Medical Gazette, July 14.

Hence it follows that, in these cases, tracheotomy ought to be performed, not in order to facilitate the passage of the foreign body through the glottis, by diminishing the sensibility of that part, but in order to allow it a free exit through the artificial opening, which is not endowed with so extraordinary a degree of sensibility.

Another point is, whether in those cases in which some heavy foreign body has found its way into the air-passages, it would not be advisable, after the performance of tracheotomy, and before putting the patient into a prone position, to introduce some instrument into the opening in the trachea, so as to prevent the foreign body from being thrown, during the change of position, into the larynx or against the glottis, and thus occasioning much distress to the patient and embarrassment to the operator.

As the sensibility of the parts is not materially lessened after the trachea has been opened, Mr. Erichsen thinks this to be a sound piece of advice, and has accordingly invented an instrument for this purpose, the use of which might be attended with some advantages.

ON THE PRESENCE OF SPERMATOZOA IN THE FLUID OF COMMON HYDROCELE. By E. A. LLOYD, Esq.

At a late meeting of the Royal Medical and Chirurgical Society, it was announced that Mr. Loyd had found, by the aid of the microscope, numerous spermatozoa in the fluid drawn off by tapping in two cases of common hydrocele. The first case occurred in the early part of last Winter. About three months afterwards the second case occurred. The patient was 63 years of age, and had been operated on for hydrocele about fifteen times. Sixteen ounces of a highly albuminous greenish-yellow fluid were drawn off. The author counted forty of these animalcules in one drop of this fluid; some of them were observed to retain their power of motion for three hours after the fluid had been evacuated. Blood-globules, transparent cysts, and small granular bodies, with portions of epithelium, or what much resembled it, were likewise found in the fluid.

At a subsequent meeting of the Society Mr. Childs stated that he had met with a third case of hydrocele in the fluid of which an immense number of spermatozoa were present. The fluid was of paler colour than that of common hydrocele of the tunica vaginalis, and very much resembled water with which a very small quantity of milk had been mixed. When tested with nitric acid, and also with heat, the fluid was found to contain a considerable quantity of albumen. There was also much saline matter in it. When examined with the microscope from three to four hours after it was drawn off, there were seen spermatozoa in a living state, and also an immense number that were dead: moreover, the fluid contained a few blood-discs, transparent cysts, granular bodies of different sizes, and epithelial scales. The testis and its appendages were healthy. From the situation and form of the tumour it appeared that the liquid was contained in the tunica vaginalis.

Mr. Childs had examined the fluid of many hydroceles, but had never met with any animalcules except in these three cases.

DR. WATSON ON THE PATHOLOGY AND TREATMENT OF VARICES.*

Varices, which, according to the definition of Dr. Watson, are veins morbidly

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* American Journal of Med. Sciences, Jan. 1843.

dilated, and usually elongated, convoluted and nodulated, may occur in almost any part of the body; the present paper, however, is confined to those in the vessels of the leg and thigh.

The changes produced in the vessels are, first, simple dilatation, which, though it may result from mere physical distention, soon leads to a proper interstitial development; the vessel then grows in length, and falls into folds and convolutions which occur most readily at those points where the least resistance is offered. The walls of the veins now yield irregularly to the pressure of the blood, constituting thrombi; these irregularities are at first easily effaced, but by degrees become fixed. The vessels contract adhesions to the surrounding tissues, which soon take on a diseased action, and become condensed into firm bands, uniting the different convolutions, preventing the vessel from exercising its proper elastic form for diminishing its calibre, and binding them into one mass in the form of a varicose tumour.

The next stage consists in the development of the elastic coat of the vessel; this, which is naturally extremely delicate, may become thicker and firmer than the corresponding coat in the largest arteries; it is then found to have a pale bluish, grayish or sometimes yellowish appearance; a cartilaginous hardness, and considerable contractile force. This hypertrophy may be either uniform, or partial, constituting nodules; these nodules may be numerous, and, when felt underneath the skin, giving the sensation of a hard knotted cord.

The inner coat appears to be the last to suffer. It becomes at last thrown into reticulated depressions, and afterwards into minute longitudinal folds, giving it, with the reddish tinge which it has now acquired, the appearance of delicate muscular tissue.

In consequence of these changes, the circulation becomes languid, the skin is engorged with venous blood, troublesome ulcerations break out, hæmorrhage not unfrequently takes place. The varices themselves are subject to attacks of erethism bordering on subacute inflammation. This leads to extension of the disease to other vessels, or induces ulcerations in their coats, giving rise to sudden hæmorrhages; or, finally, acute suppurative phlebitis may supervene spontaneously in the progress of varices, and lead to fatal consequences.

Treatment.—The treatment may be adopted with three views.

First.—To prevent engorgement of the limb; to keep the disease from increasing, or from exciting ulceration, or other concomitant affections; or to relieve these when existing. These indications are best effected by moderate compression, aided by elevation of the limb, simple dressings to the sores, &c.

Second.—To diminish the size of the vessels gradually and permanently. Varices may, in some cases, be gradually reduced by a change in the habits of life that gave rise to them. But they may be more rapidly reduced by special modes of applying pressure, by exciting inflammation in the tissues surrounding them, &c. Thus, Mr. Travers succeeded in obliterating a varicose cyst of the saphena, by means of adhesive plaster, applied in strips round the limb with as much tightness as could be borne. The vein inflamed, the cyst became a solid tumour which was at last perfectly obliterated. Or escharotics may be applied to the integuments over the affected parts; these, however, may give rise to diffuse phlebitis, to hæmorrhage or even to fatal consequences: and, if not carried so deeply as to excite adhesive inflammation in the vessel, they necessarily fail.

Third.—To obliterate the varices at once, and to force the blood into new channels. Aware of the ease with which the blood is returned by new channels after its proper veins have been obstructed, surgeons have long been in the habit of attempting the obliteration of these veins when diseased; and for this purpose have employed a great variety of measures.

Laceration.—This was in use among the early Romans. Caius Marius submitted to it on one leg, but very wisely declined having the operation performed

on the other. It was effected by elevating the varicose veins and tearing them forcibly from their attachment.

Cauterization.—This also has long since been rejected.

Excision.—This was also practised by the ancients. Celsus was accustomed to expose the vein at several points, and then cut out portions of it.

Erosion has also been recommended and practised: but, in order that it may succeed, it is necessary to apply the caustic deeply, and then it may give rise to abscesses along the course of the vessels, to alarming hæmorrhage, to diffuse phlebitis, and has ended fatally. Sir E. Home instituted the practice of employing ligatures; though occasionally successful, so many fatal consequences have ensued, that it has for the most part been abandoned. Soon after this, Sir Benjamin Brodie proposed the *subcutaneous incision*; this is recommended only when there are but few varices in the limb, and is performed on the branches, not on the main trunk of the saphena; even this has been followed by fatal inflammation. Of late years several distinct modes have been proposed of interrupting the circulation through the vessel by pins and ligatures, without exposing it. None of these, however, appear to be unattended with danger.

The operation which Dr. Watson usually performs in such cases as appear to him actually to demand such interference, is this: having rendered the vessel turgid, he makes an incision over the dilated vein, and raises it on a probe; other incisions are then made in proportion to the extent of the varices and the freedom of their anastomoses Portions of the vein are then cut out in each of these situations, beginning with the lowest, the edges are brought together, and compression made by means of a roller. Afterwards the starched bandage is applied.

Several cases are related in which this operation was performed, but though usually successful, two instances are mentioned in which it proved fatal.

Hydrocephalus, occurring at a particular Period of Life. By Henry Kennedy, M.B., &c. &c.*

Dr. Kennedy presents us, in our Dublin contemporary, with an ample account of this affection. We confess that we have our doubts on its *hydrocephalic* nature. It appears to us to be rather, continued fever terminating in effusion within the cranium. We refer such of our readers as are curious with regard to particulars to the original paper. The following summary, drawn up by Dr. Kennedy, will give an idea of his views. He puts it in the shape of Propositions.

"1. That an affection of the brain of the hydrocephalic character is not at all unfrequently met with between the ages of 12 and 25 years.

"2. That it is more common in females than males, in the proportion of two to one.

"3. That in the majority of cases it commences with symptoms of mild fever, which goes on without change for ten, twelve, and fourteen days.

"4. That it sometimes begins by a distinct complaint of the head for some days, the patient still being able to go about.

"5. That when the disease commences by fever, the first signs of anything going wrong take place very commonly at night.

"6. That a marked increase in the degree of fever may then be observed.

"7. That during the progress of the disease the pulse exhibits the characters of hydrocephalus, and to a marked degree.

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* Dublin Journal, July, 1843.

"8. That alterations about the eye are often among the earliest symptoms pointing out that mischief is coming.

"9. That the pathology of the affection is confined in great part to the arachnoid at the base of the brain, with more or less effusion into the ventricles.

"10. That there are some grounds for supposing the inflammation to be of a specific character, probably strumous.

"11. That once the affection has fully declared itself, the treatment has yet to be determined.

"12. That local bleedings with mercury and blisters hold out the best prospect of success."

SIMPLE MODE OF TREATMENT FOR PROLAPSUS ANI. By DR. M'CORMAC.*

We are afraid that the following news is too good to be true, viz. that prolapsus ani is to be cured by simply holding aside the skin round the anus, when the child goes to stool. Dr. M'Cormac, however, relates a case to that effect.

The subject of it had laboured under prolapsus from the age of one year till between five and six. The protrusion occurred at every stool, sometimes amounting to an inch or more, and had always to be reduced, a procedure attended with some difficulty, and more or less pain. The child had a relaxed aspect, was easily affected in her bowels, and evidently suffered in her general health. Dr. M'Cormac had tried everything that he could think of, short of an actual operation, painful to say the very least of it.

"Reflecting on the procedure in question, it occurred to me that the same result might in a measure, at least while the child was at stool, be secured by careful manual traction. I immediately stated my views to the intelligent mother; she entered into them at once, and promised, if possible, to carry them into effect. Accordingly, when the child went next to stool, the skin exterior to the anus was drawn to one side by means of the fingers extended around. The little girl submitted to this with some reluctance, and complained that she could not evacuate her bowels. She was encouraged, however; a stool was obtained; from that day and date, now a month since, the bowel has not once descended. The stools, which previously were from two to four every day, have become much fewer, as well as of a more formed consistence and natural colour; while the child's health, spirits, and strength, are in other respects much ameliorated. There is now no prospect of the disease ever returning; the little girl requires comparatively little attendance; her mother, in fact, is only required to stand by, and in a short time, it is to be hoped, her onerous and anxious ministry will wholly cease."

The method is worth trying, but what with the attention it requires for a length of time, and what with the rather simple pretensions of the remedy itself, we feel some misgivings with respect to the result.

ON THE DIAGNOSIS OF VALVULAR DISEASE OF THE HEART. By J. M. O'FERRALL, Esq.†

Mr. O'Ferrall gives several cases and makes some very interesting remarks on the diagnosis of disease of the left auriculo-ventricular valve. Passing over the cases, we shall allude to Mr. O'Ferrall's views.

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* Dublin Journal, July, 1843. † Ibid.

He observes, with justice, that when disease of the mitral valve proves fatal in its earlier or middle stages, the event is generally found to be owing, either to complication with renal, or some other chronic disease, or to one of the many accidents, in the lungs or pleuræ, to which this affection so often leads. Pulmonary apoplexy, pneumonia, bronchitis, or pleurisy, frequently interpose to prevent the completion of the morbid process. Now, in cases of this kind, witnessed by Mr. O'Ferrall, there was *a systolic bruit beneath the left mamma, persistent to the last, and looked on by him as characteristic.*

But, in some cases, this bruit disappears with the advance of the disease; and, in such, he has found the contraction of the opening so great, that *even the shortened valves were rendered capable of preventing a reflux*, and, consequently, performed their function once more. He asks, if it can be doubted that, should such cases be seen for the first time in this stage, by those who follow the text of Dr. Hope, a corresponding diagnosis would have been made, and the existence of valvular disease altogether denied.

"I am far," he adds, "from believing the rule to be, that in the advanced stage of disease of the left auriculo-ventricular opening, the phenomena of regurgitation shall cease. On the contrary, I have records of many cases, in which great contraction did not prevent the occurrence of a refluent current through the aperture. But in these cases, the inadequacy of the valve was still apparent, on inspection. I only maintain, that a valve, so shortened as to be incapable of closing the normal opening, may become adequate to its task, in consequence of progressive contraction, *combined with* a favourable adaptation of the aperture itself."

He subjoins the following propositions:—

"1st. That regurgitant disease of the mitral valve is attended by persistent murmur with the first sound.

"2d. That the subsequent disappearance of this murmur does not lessen the value of the sign, nor contradict the diagnosis, at the time it was made.

"3d. That the order of the phenomena here described in *combination* with the *general symptoms* of this disease, constitute a rational evidence of the supervention of contraction of the opening, to a degree proportioned to the previous shortening of the valve.

"4th. That uncomplicated obstruction of the aperture is not necessarily attended by a murmur.

"5th. That the general symptoms of disease of the mitral valve are not to be distinguished from those of *softening*, merely by the presence of murmur, as has been asserted by authors.

"6th. That the diagnosis can be made, only, by the observation, that a well-marked systolic murmur had *previously* existed, in *combination* with the *general symptoms* of the disease."

ON A PECULIAR MORBID AFFECTION OF THE STOMACH, CHARACTERIZED BY REGURGITATION OF ITS CONTENTS, WITHOUT NAUSEA. BY SIR HENRY MARSH, Bart., M.R.I.A., &c.*

Sir Henry defines regurgitation to be that act whereby, without nausea, without convulsive effort, the contents of the stomach, gaseous, liquid, or solid, by a species of anti-peristaltic motion, are expelled. He remarks the utility of the function in the lower animals, particularly in the ruminants, as well as in the human subject, under particular circumstances. Thus the infant gets rid of the superabun-

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* Dublin Journal, July, 1843.

dant quantity of milk—at all ages the gases of the stomach are so extricated—in pyrosis, fluid is thrown up.

In reference to *pyrosis*, we would make this observation. Without disputing the fact, that the fluid *may* come from the stomach, we are sure that, in many instances, it is the product of the *salivary glands*. We are ourselves prone to suffer from the affection, and have distinctly made out, in our own persons, that such is the fact. The peculiar sense of contraction and nausea at the pit of the stomach, precedes a distinct and copious secretion from the salivary glands of the mouth. This fills with their secretion, and may be swallowed again and again until the flux subsides.

But even *rumination* may occur in men. Sir Henry relates two instances, the first, apparently, an unexceptionable one.

"I knew, many years ago, a remarkable example of rumination in a gentleman, who was a clerk in a bank; he enjoyed good health, lived at his desk, took but little exercise, and dined hurriedly, scarcely allowing himself time to masticate his food. Soon after dinner, portions of food, with little or no effort on his part, ascended into his mouth, were remasticated, and again swallowed. In this manner, according to his own account, the whole of the food he had taken underwent this secondary process. It was a source of much enjoyment to him, and he prided himself upon the possession of this novel, but not very enviable, capability.

"I was called upon, not long since, to see a boy about fourteen years of age, and was informed by his mother that after every meal he regularly vomited his food, and that in consequence he had lost flesh, looked ill, and caused to his parents much uneasiness and anxiety. Upon examination, I found that there was no real derangement of the health, that his appetite was good, his bowels regular, and that the expression of his countenance did not indicate serious disease. By minute inquiry I ascertained that he did not vomit his food, but that it ascended from the stomach in successive portions, without nausea, without the least convulsive effort, and without any distress whatever to himself. I was present on one occasion whilst he was in the act of regurgitating his food; it was received into a basin; the morsels of meat successively returned had no acid taste, and did not appear to have been acted upon by the gastric juice. This occurred immediately after he had eaten plentifully and with an excellent appetite. The process of regurgitation was not preceded by any sense of distention or repletion; and whilst engaged in the act he talked and laughed as usual. He had acquired the habit, he could not tell how, since he had been sent to school, and it was quite obvious that he made use of it to induce his parents to remove him from school, and to restore him to his horses, dogs, and gun. He was taken home, and there was a speedy termination of the supposed vomiting which had so much alarmed his parents."

Sir Henry observes, in continuation, that rejection of the food, without nausea, sometimes constitutes a distressing and intractable disease. It is seen in hysterical females. Of this he relates two instances. He then details the case of a girl, between 11 and 12 years of age, of stunted growth, in whom it followed diarrhœa and violent epileptic paroxysms. He adds:—"I have seen several other well-marked instances of the same disease in young children, but in every instance connected with, and resulting from, innate constitutional delicacy, and co-existing with various disturbances of the nervous system, and derangements of the digestive function. I have seen instances of it in conjunction with chorea. In many cases of whooping-cough, the partial or total evacuation of the stomach, at the close of the paroxysm, is the result, not of the act of vomiting, but of the act of regurgitation, and in such cases, so little is there of sickness or distress connected with the expulsion of the food from the stomach, that we often find the desire for food immediately to return, and children to eat greedily after having apparently vomited; but in many of those cases, if the manner in which

the food is expelled be closely examined, it will be found that it is accomplished without the effort and the sickness which characterize the act of vomiting. This distinction is of some practical importance, because it stands opposed to a method of treatment which is sometimes adopted,—that of treating whooping-cough principally by emetics. Doubtless emetics are of use in the treatment of whooping cough, and especially in such cases as are complicated with severe bronchitis. The frequent termination of the fit of coughing in the rejection of the contents of the stomach, has given rise to the notion, that the treatment by emetics is indicated; but if the manner in which the food is rejected be carefully examined, it will appear, that the practice of treating whooping cough by exciting nausea cannot, in many instances, be fairly deduced from any natural indication."

In other instances, regurgitation forms one of the symptoms of obstinate and protracted dyspepsia. "In the same individual the food is sometimes vomited, and sometimes regurgitated; the contents of the stomach are sometimes rejected *en masse* without nausea or straining, and sometimes discharged morsel after morsel, till the whole of the contents of the stomach be disgorged. The food is in different individuals, and sometimes in the same individual, regurgitated at various stages of digestion, so that the ejected morsels present every variety of appearance and taste, from that which belongs to food just swallowed, until it be converted into perfect chyme, and mixed with the various morbid secretions which are found in a disordered stomach. Sometimes the act by which food and other matters in the stomach are propelled upwards, is accompanied with so much of nausea, and with so much of convulsive effort, as to give it rather the character of vomiting than of regurgitation, so that in fact it becomes not easy to distinguish the one act from the other. They run imperceptibly into each other, although in extreme cases, no two acts in nature can be more distinct."

Of this form of regurgitation, also, Sir Henry relates instances, and concludes the paper by some remarks upon the treatment.

For the hysterical and neuralgic form of regurgitation, the plan he has found answer best "consists of small blisters applied simultaneously to the pit of the stomach and to the spine; this, in some few instances, has been at once and permanently effectual; more generally, however, its salutary effects are only temporary; small detractions of blood by cupping in both situations have in some instances been equally successful. Benefit has been derived from small, and often-repeated doses of hydrocyanic acid, belladonna, morphine, stramonium, and other narcotics. Tonics, such as iron, bark, and bismuth, have also occasionally been found useful; but no remedy has been so often successful, in this form of the disease, as a total change of habits, change of air and scene, and travelling. In one case electricity was completely effectual in curing the complaint; it failed in others. In another instance, a sudden and powerful mental emotion totally and permanently removed the disease."

He has found it useful to advise the recumbent posture for an hour or more after each meal—to eat slowly, and to masticate the food well—to eat less than the appetite demands—to be moderate with fluids, and to avoid distention of the stomach.

The affection has coexisted with tubercular disease of the lungs in not a few instances.

When combined with dyspepsia, "it is generally traceable to long continued mental anxieties; to over thoughtful, studious, sedentary, and solitary habits; to the swallowing of food hastily without sufficient mastication and insalivation; to the utter neglect of the two most excellent promoters of healthy digestion—cheerful society, and full, free, enjoyable muscular exercise.

"In some cases it may be traced to excesses in sexual indulgences, and abuses of the sexual propensity." Every violation of the laws of Nature may give rise to it, and struma strongly predisposes to it.

An interesting communication.

THE SALE OF ALUM TO BAKERS.

On examining the Act of Parliament, it appears that chemists and druggists are not liable to a fine for selling alum to bakers, although bakers are subject to penalties and imprisonment for using it in the manufacture of bread, or even having it on their premises. But, notwithstanding this law, baker's bread is seldom if ever free from alum. We have been informed by some of the trade that it is *absolutely necessary* in the quartern and half quartern loaves, which would otherwise adhere together on being withdrawn from the oven, instead of separating with facility, which is generally the case. In cottage loaves and other fancy bread, the bakers admit that alum is not so necessary, and its use, in these cases, is much less frequent.

Various contrivances are adopted to evade the law. Alum is called by bakers "*stuff*," or "*the doctor*." It is usually bought by the master, who deposits the proper quantity for each batch in some corner of the premises, where the foreman finds it at the proper time. In some houses the master is subject to a fine in case of his neglecting to provide "the doctor;" which fine is the perquisite of the journeyman. By these and other precautionary regulations, the inconvenience of detection is avoided; and although every person knows that alum is always used, no one is in possession of positive evidence of the fact, and all persons concerned keep their own counsel, being bound by that kind of "honour" which prevails "among thieves." The masters are interested in using "the doctor," because they can by this means improve the appearance of an inferior flour; and the men are equally interested in the matter, as the bread is made with less trouble. The parties aggrieved by this practice are those who consume the bread. Dr. Pereira, in his Treatise on Food and Diet, observes:—

"Whatever doubts may be entertained as to the ill effects of alum on the healthy stomach, none can exist as to its injurious effects in cases of dyspepsia. Bread which contains alum is objectionable, not merely on account of this salt, but because it is generally made from inferior flour, which, when mixed with yeast and water, and formed into dough, quickly passes through the stage of vinous fermentation, and becomes acid."—*Pharmaceutical Journal.*

MR. ROBERTSON ON EARLY MARRIAGES.

Mr. Robertson has been publishing in the *Medical Gazette* some observations upon early marriages in oriental countries as a proof of early puberty. The conclusions arrived at are these.

1st. That in England, Germany, and Protestant Europe in general, early marriage—that is, marriage about the age of puberty, would seem to be comparatively rare.

2nd. That early marriage prevails among the uncivilized tribes which wander within the arctic circle; as it likewise does in all cold countries without any exception, the inhabitants of which are in a state of ignorance and moral degradation.

3rd. That throughout European Russia, which is confessedly low in civilization, extremely premature marriage was the custom at no distant date.

4th. That, at the present day, in the most southerly countries of Europe, where the people are immersed in superstition and ignorance, marriage is early.

5th. That in Ireland, which, as to its moral condition, somewhat resembles the last-mentioned countries, the marriage union takes place among the Roman Catholic population at an age probably almost as early.

6th. That in England about two centuries ago, when debasing political and

social circumstances combined to favour the practice, early marriages were general, at all events, in the upper ranks.

7th. That in all the countries to which reference has been made, juvenile marriage is invariably seen as an attendant on ignorance and moral debasement, and this without reference to *climate*.

8th. That consequently it is perhaps allowable to infer that early marriage in oriental countries, (which has generally, in the absence of all proof whatever, been ascribed to precocious puberty,) does solely depend on the same moral and political causes as elsewhere produce it; more especially as those very causes are well-known to exist, at present, in an aggravated degree, in all oriental and inter-tropical countries.

9th. That, instead of ascribing early marriage, so prevalent in our Asiatic dominions, to precocious puberty, (in the absence of all evidence whatever of the fact,) it would be desirable to try moral and legislative remedies, with a view to the removal of a practice so injurious; a practice which seems to be incompatible with social improvement.

A STATEMENT OF THE MEAN TEMPERATURE OF THE AIR, AT AUCKLAND.

A number of the Auckland Chronicle has been forwarded to us, containing some remarks on the climate of New Zealand.

It appears that, at Auckland, which is situated in lat. 36°.51. S., long. 174°, the mean temperature of the year is 58°. 26, of the Winter, 50°. 46, of the Spring, 56°. 18, of the Summer, 67°. of the Autumn, 59°. 63. In the warmest month, the mean temperature is 70°, in the coldest 49°.

From this it appears, says the writer, that the approximation of the temperature of Auckland to that of those towns in France most famed for their climate, is very striking, but with this superiority, that equality of temperature is much more favourable to Auckland than to the others: we may instance Montpelier, proverbial for its salubrity; there the difference between the mean temperature of the warmest and coldest month, is 35°, while at Auckland it is only 21°, making a difference of 15 degrees in favour of the latter—at Marseilles it is 30°, at Rome, 35°, even at Pau, in the south-west of France, latterly much frequented by invalids, from the supposed equality of its climate, the difference is still 32°, so that the climate of Auckland is milder in Winter and cooler in Summer, the variations of the temperature are less, and in these respects, it is much superior to all the above-named places.

Several fatal cases of consumption have doubtless occurred at New Zealand, but these it is said, were hopeless before arriving there, whilst some cases of pulmonary disease of a very aggravated character have been successfully treated, and succeeded by a more rapid convalescence than ever occurs in Great Britain. Epidemic diseases are scarcely known, and others are mild in character and brief in duration.

Of the Emigrants who arrived there in October last, most of them were inhabitants of towns, many of them occupied in sedentary or unhealthy trades, and consequently of feeble and unsound constitutions—numbers landed much afflicted by the scurvy and other diseases of debility, yet, out of about five hundred souls, only two adults have since died, one a worn-out veteran, who had served at Waterloo, another a sick imbecile woman, and two or three infants; all the rest have recovered their strength, enjoy good health, and have increased the population by a number of births.

The writer concludes, by strongly recommending the choice of Auckland to those about to emigrate. "In this genial and equable climate the colonist escapes the seven months Winter of Canada, and its short burning Summer—

the aridity of our African colonies and the withering droughts of Australia. He can assure himself of a return for his labour in an abundant harvest, and a profit on his outlay for stock by dairy produce, and the yet unexplored resources of the country are open to his knowledge and perseverance. Here he may acquire a competence without the risk of health, and enjoy a vigour of constitution to which he was a stranger at home, and he can live in a colony where the laws and institutions of Britain, her domestic and social habits are transplanted and have taken root."

Miscellanies.

HYDROPHOBIA.

To the Editor of the Northern Times.

SIR,—Upon the return of the writer from the country at noon yesterday, he was shocked to find that a large dog, a short time before his arrival, had worried a very little dog, at his hall door, to such a degree that the steps were covered with the poor little animal's blood, which the servants immediately washed away with several buckets of water. He has since learned that a furious dog, of large size, was soon afterwards attempted to be destroyed in Monkwearmouth, but not before he had bitten, at least, three other dogs.

Every practical hint in respect to this frightful disease—hydrophobia, ought to be attended to by all classes of the community, and from actual observation, and well preserved notes, the writer will transcribe a few paragraphs for the perusal of your readers, and which, *at this moment may be of some service in these parishes.*

Some years ago, the writer was called to visit a stout young man, residing in Bishopwearmouth, on the second day of an attack of hydrophobia, who had been bitten by his own dog about four weeks previous to the attack. This young man died the day following, displaying all the distressing symptoms of the disease.

Two other persons had been bitten by the same dog. They were greatly alarmed at witnessing the progress of the disease, and placed themselves under the sole management of the writer. The bitten parts, which were in a state of ulceration, were well washed, and dressed with savin ointment. The system was kept free by the use of cooling aperients. From ten to fifteen grains of blue pill were given daily, in order that the salivary glands might be freely acted upon. The *virus* of hydrophobia is conveyed by the saliva of the rabid animal at the instant the bite is inflicted, and it was on this account that, as a prophylactic the mercury was pushed till the salivary glands became affected.

This plan was continued in these two cases for four or five weeks, and was only discontinued after the ulcers were healed up—during the use of dressings with savin ointment. These two individuals never shewed the slightest symptom of hydrophobia, and enjoyed good health for many years.

Not long after that period, the writer was called to visit a young woman residing in Monkwearmouth, in her eighteenth year, who had been recently bitten by a mad dog, while she was feeding two young pigs; both of which the rabid animal bit at the same moment. Both the pigs died, displaying all the symptoms of hydrophobia, as witnessed by the late Dr. Happer.

The writer was fortunately enabled to calm her fears, and obtain confidence in his experience. Dr. Happer, at the request of the writer, removed all the bitten surface, and took from a vein of her arm thirty ounces of blood; aperients were

now administered, and the plan mentioned above was most rigorously pursued, and it is pleasing to add, that this young person continued for many years in good health.

In the year 1824, a Dalmation, or coach dog, of great size, refused to attend to the wishes of the writer's servant, and squatted in his gite, in the stable. The servant pursued him, very foolishly, and laid hands upon him, when the animal bit him severely upon the ball of the thumb. The writer having read accounts of cases in which dogs, not in a rabid state, but under great irritation, had conveyed hydrophobia to our fellow-creatures, took his servant to the infirmary, and after the hand was well washed, he placed it under the influence of a very powerful air-pump and exhausted the air till the blood covered the plate of the exhausted receiver to some extent. The wound was dressed with simple ointment, and soon healed. The writer saw this individual to-day, who is now in the service of a personal friend.

The writer is aware that all the members of the faculty of medicine are impressed that there has not yet been discovered that great desideratum, a cure for hydrophobia. It is on that account that these facts are placed before your readers.

Medical men, it is to be regretted, have too frequently used heroic remedies in this disease, and it has sometimes been a question whether the remedies or the disease have removed the unfortunate patients from their severe afflictions! I will mention one case amongst many—Mr. Cripps, of Liverpool, prescribed for a patient afflicted with this disease, twenty drops of croton oil in a short space of time —when it is notorious that one single drop of this medicine has been known to cause most violent symptoms, from its highly acrid and irritating effects upon the mucous membrane of the intestines.

Were the writer called to visit a case of hydrophobia, he would, in all probability, in addition to the above-mentioned remedies, order large blisters to be placed over the fauces, and have them dressed with equal parts of blue ointment and simple cerate—which in a short time would cause an abundant discharge of mercurial saliva, and which could be readily kept up by the blue pill. Perhaps opiate enemata, and other antispasmodic remedies, might be requisite in the progress of the disease.

There is one thing in which medical practitioners have heretofore been agreed —viz. that all regularly-educated medical men are entitled to attend hydrophobic patients, and witness the effects of the treatment:—Alas! we dare not say *method of cure* as expressed in respect of all other medical diseases incident to our fellow-creatures.

In conclusion, the celebrated Dr. Fothergill, in treating upon this *opprobrium medicorum*, appends the following pertinent remarks:—"In order to remove uncertainty, if those who are applied to on these interesting emergencies would consider themselves as obliged, by the honour of their profession, and the ties of humanity, to note with all possible precision and impartiality, every incident in the progress of this disease, and whether they pursue the hints here suggested, or take up more rational ones from their own store, would communicate the result to the public, by this method the field of conjecture would be contracted, and our successors directed to new objects of investigation. The result would not be less honourable to those who engage in the research, than beneficial to mankind in general."

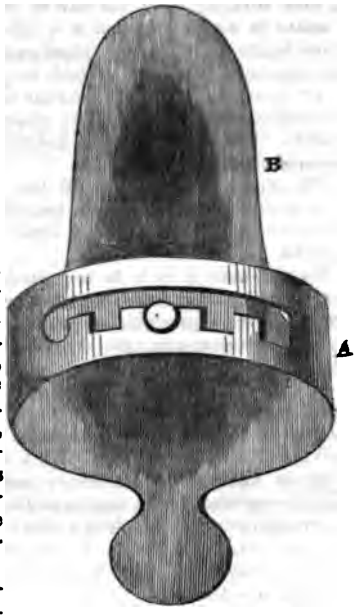
The Writer offers his best wishes,

Bishopwearmouth, 12th Sept. 1843. W. R. C.

☞ We have reason to know that the writer of the above is the talented Dr. Reid Channy, of Sunderland.—*Editor.*

DR. HOLT YATES' SPECULUM ORIS.

This useful little instrument was introduced to the profession by Dr. Holt Yates, of the Royal General Dispensary, in London, in the year 1836—since which time, he and some others have been in the habit of employing it with great advantage, in all cases in which an accurate and extensive view of the fauces was required. It deserves to be made more generally known. To the surgeon it is of essential service in the removal of tumours, or when called upon to perform any similar operation about the tonsils. By its means, not only may the jaws be distended without inconvenience to the patient, and the adjacent parts protected from injury, but the operator is enabled to see what he is about, take his own time, and to have *both his hands at liberty*. The instrument is so simple, it tells its own story; and being made of silver, the most fastidious person cannot object to its use. It consists of a graduated hoop (A) with a sliding button, so placed that it may be adjusted to the age of the patient, and other circumstances. Being gently pressed upon above and below, by the teeth, the Spatula (B) which is concave above, and slightly inclined downwards towards the extremity, depresses and protects the tongue,—and thus, an extensive and uninterrupted view of the fauces is obtained.



Any gentleman wishing to see the speculum, may do so, by applying to Mr. Simpson, surgical instrument maker, 55, Strand, or at St. Bartholomew's Hospital, where the instrument is employed.

NOTICE TO MEDICAL PRACTITIONERS.

Surgeon's Hall, Edinburgh August 30, 1843.

The Royal College of Surgeons of Edinburgh are desirous to make it publicly known that they have lately represented to the Secretary of State for the Home Department, the injury occasioned to their fellows and licentiates, by the General Medical Order of the English Poor Law Commissioners, with respect to the appointment of Medical Officers to the Unions, Parishes, &c. under 4 and 5 William IV. c. 76, by which order all persons are excluded from these offices who have obtained their Medical qualifications in Scotland or Ireland. In consequence of this representation, the Commissioners were directed by the Home Secretary to lay a case before her Majesty's Attorney-General, for the purpose of ascertaining the state of the law under which they considered themselves bound to direct such exclusion. The Attorney-General has stated it to be his opinion, which is coincided in by Mr. Martin, another Counsel consulted, "That as far as the question of *Surgery* is concerned, those persons who have a *Surgical* Diploma, or Degree, from a Royal College or University in Scotland or Ireland, are

(in point of law) as competent to be appointed, and to act as Medical Officers under the Statute referred to, as the persons who have the diploma of the Royal College of Surgeons in London."

In consequence of this opinion, the Commissioners have intimated their intention to admit those persons who hold a Scotch or Irish Diploma or Degree in Surgery, "to the same rights under the Poor Law Amendment Act, as members of the Royal College of Surgeons of London," and "their readiness to make such modifications in their General Medical Order of the 12th March, 1842, as may be necessary for giving effect to the above recited opinion of the Attorney-General."

By order of the Royal College,

JOHN SCOTT, Secretary.

ROYAL COLLEGE OF SURGEONS IN LONDON:

REGULATIONS OF THE COUNCIL

Respecting the Professional Education of Candidates for the Diploma, *August 15th*, 1843.

I. Candidates will be required, in addition to a Certificate of being not less than twenty-one years of age, to bring proof

1. Of having been engaged in the acquirement of professional knowledge for not less than four years; during which period they must have studied Practical Pharmacy for six months, and have attended one year on the Practice of Physic, and three years on the Practice of Surgery, at a recognised Hospital or Hospitals in the United Kingdom;*—three months being allowed for a vacation in each year.

* *By a Resolution of the Council on the 7th November*, 1839, *no Provincial Hospital will in future be recognised by this College which contains fewer than* 100 *Patients, and no Metropolitan Hospital which contains fewer than* 150 *Patients.*

2. Of having studied Anatomy and Physiology, by attendance on Lectures and Demonstrations, and by Dissections, during three Winter Sessions, of not less than six months each.

3. Of having attended at least two Courses of Lectures on the Principles and Practice of Surgery, delivered in two distinct periods or seasons, and one Course, on each of the following subjects, viz. the Practice of Physic—Chemistry—Materia Medica—and Midwifery with Practical Instruction.

II. Members and Licentiates in Surgery of any legally constituted College of Surgeons in the United Kingdom, and Graduates in Surgery of any University requiring residence to obtain Degrees, will be admitted for examination on producing their Diploma, License, or Degree, together with proofs of being twenty-one years of age, and of having been occupied at least four years in the acquirement of professional knowledge.

III. Graduates in Medicine of any legally constituted College or University requiring residence to obtain Degrees, will be admitted for examination on adducing, together with their Diploma or Degree, proof of having completed the anatomical and surgical Education required by the foregoing Regulations, either at the School of the University where they shall have graduated, or at a recognised School or Schools in the United Kingdom.

IV. Certificates will not be recognised from any Hospital unless the Surgeons thereto be members of one of the legally constituted Colleges of Surgeons in the United Kingdom; nor from any school of Anatomy, Physiology, or Midwifery, unless the respective Teachers be members of some legally constituted

College of Physicians or Surgeons in the United Kingdom; nor from any School of Surgery, unless the respective Teachers be members of some legally constituted College of Surgeons in the United Kingdom.

V. Certificates will not be received on more than one branch of science from one and the same Lecturer: but Anatomy and Physiology—Demonstrations and Dissections—will be respectively considered as one branch of Science.

VI. Certificates will not be received from Candidates for the Diploma who have studied in London, unless they shall have registered their Tickets at the College, as required by the Regulations, during the last ten days of January, April and October in each year; nor from Candidates who have studied elsewhere, unless their names regularly appear in the Registers transmitted from their respective Schools.

N.B.—In the Certificates of attendance on Hospital Practice and on Lectures, it is required that the dates of commencement and termination be clearly expressed; and no interlineation, erasure, or alteration will be allowed.

Blank forms of the required Certificates may be obtained on application to the Secretary, to whom they must be delivered, properly filled up, ten days before the Candidate can be admitted to Examination; and all such Certificates are retained at the College.

By order of the Council,
EDMUND BELFOUR, *Secretary.*

PROFESSIONAL SUCCESS—GRAVITY VERSUS HILARITY.

Our contemporary, the Gazette, has favoured the profession with an Essay on Professional Success, which is good in its way, though not exactly after the manner of Dean Swift, nor Rabelais, nor Goldsmith, nor even quite so light as Addison's. But *n'importe*, it inculcates some very sound decorum and morality, and, if somewhat prosy, shares that fault in common with many excellent discourses. But the point to which we intend to allude is, one generally discussed by our contemporary—the advantages of seriousness. He observes—

"Seriousness, not occasional but habitual; earnestness, not affected but real, are useful in securing the confidence of the sick, and indispensable in the studies which prepare us for practice: and if the unvarying liveliness of a mercurial temperament, seems, in some instances, to have been a prime element of professional success, we may rely on it that such unwearied cheerfulness has only lightened the labours of conscientious activity; that it has been kept up by a consciousness of duties performed, not used as a substitute for duties neglected. Of those who can set the table in a roar, how many can leave it at the calls of duty?"

True as this may be, it cannot be deemed new, as their very charter designates the members of the College of Physicians "viri *tristes* et docti," and, no doubt, their solemnity stands them in stead. Who has not remarked some learned man, bending over a dubious stool, with a face in which are displayed all that seriousness and earnestness, so powerfully inculcated by our contemporary; and who, at the same time, has not noted the admiration which such philosophical devotedness to the cause of science and his patient, has excited in the attendant mother, or the aunt, or, above all, in the grandmother? The well-weighed words, the Burleigh shake, of a professional opinion, as dark as the darkest Delphic oracle, and quite as well suited to whatever may turn up, are parts of that gravity which must pervade the sayings and doings of a doctor, and to the uninitiated, savour a little of humbug. In fact it is often, in this composite world

of ours, difficult to separate the latter abused, but well used, instrument from the "conscientious earnestness" which it represents.

It must be agreed, we think, *nem. con.*, that doctors of physic should be grave, at any rate before their patients. Who, then, is to be lively? for something like fun may surely be permitted to the faculty. We fancy it must be given up to those queer fellows the surgeons—whose business of passing catheters, tying piles, and curing claps, does not necessarily require such length of visage, or intense profundity of thought. And hence, we suppose, it is, that so many of these same surgeons have been chatty, good-humoured sorts of men, not indisposed to crack either a bottle or a joke, and have not greatly suffered in the estimation of the world notwithstanding. Far be it from us to defend this. We merely chronicle the fact, and, at the present time of day, when to look wise is almost as good as to be so, and to scorn pleasantry is held by many as a certain evidence of mind, we would caution the rising generation against being misled by the lives of such persons as Cooper or Abernethy.

After all, we believe as good a precept as any, and as short, is this—*study* your profession *well*, and *practise* it *honourably*. The more you adhere to this golden rule, the less necessity there will be for affectation, hypocrisy, or humbug. A good man's own heart will tell him where a joke would be cruel—a solemn sentence cant; and the higher a man's character stands for probity and for professional ability, the less need will there be for trimming his manners to any artificial standard.

DINNER TO SIR BENJAMIN BRODIE.

Our contemporary, the Gazette. contained a very accurate account of the dinner given to Sir Benjamin Brodie, at Willis's Rooms, in August last, on the occasion of presenting that gentleman with a medal. The profession is too well acquainted with the private and the public claims of Sir Benjamin Brodie on its estimation, to make it necessary for us to dwell upon that theme, however grateful. It would be hard indeed if kindliness towards his brethren of the most sterling quality—a sympathy for merit not confined, as it often is, to idle protestations and barren wishes, but extending to liberal and generous acts—a simple, unaffected, and genuine courtesy—conduct in his profession sans peur et sans reproche—a philosophical mind that not only confers success upon his practice, but makes it a study and a model—a sense of principle and duty which, much talked about yet rarely seen, is to him no effort, but a habit—and last, not least, a modesty which disclaims the merit that all except itself can see, and shuns the notoriety for which others live—it would be hard, we say, indeed, if this were not known, and, being known, rewarded by the affectionate admiration of his countrymen.

The very act that has given birth to the commemoration, stands alone in our professional history. Where do we see men in the prime of their faculties resigning a lucrative and influential appointment, on considerations of duty? Yet it was on those considerations only that Sir Benjamin Brodie retired from St. George's Hospital. He felt that such situations are held too long; that after years have cooled down zeal, and the press of private business interferes with the devotion of time and thought to public duties, the emoluments and dignities of office are retained to the exclusion of younger and more active men. Sir Benjamin Brodie felt this, or something like this, and with him to feel what is just is to do it. Whether his example be followed, or not, the act is, in itself, one worthy of imitation, and creditable alike to his heart and head.

Nor can he be said to be unrequited. Conscientious conviction has its own rewards, independently of popular suffrages or gratitude, and such recompense

is, too frequently, all that it receives. But it has been Sir Benjamin Brodie's felicity to gather in his life, what is seldom reaped by the living, that harvest of golden opinions which is usually garnered up only for the dead. And a proud thing it must be to him to see envy silenced, and jealousy asleep; and in his latter days, which we trust will be many, to find himself held by the profession of his choice in esteem and veneration.

MR. READ'S INSTRUMENTS.

We have often had the pleasure of directing attention to the apparatus of this ingenious mechanician. We have lately seen one of his contrivances which promises to be of much service. To his enema syringe, or stomach pump, he has attached a long flexible tube with a conical bulbous extremity and large lateral apertures, which may not only serve for the stomach, but is applicable to cases of impacted fæces in the colon. This may be introduced as high up the rectum as it will go. Then air or water may be thrown in, so as to distend the bowel; this will perhaps permit it to slip in farther, and so either air or fæces may be got rid of. Mr. Read has mentioned to us one or two striking cases, in which it has been a means of saving life. We would advise our medical friends to look to it.

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*** *This Edition is a good deal improved. It is one of the most useful and honest little works which can be put into a female's hands.*

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